

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 11,0U14
 Edition : 24.8.87
 Superceeded : 11.86
 Calibrating oil : ISO-4113
 Combination no. : 0 402 646 827 0
 Injection pump
 Pump designation : PE6P120A720RS70010
 EP type number : 0 412 626 800
 Governor
 Governor design. : RQ200/1000PA713-1
 Governor no. : 0 421 801 324

Customer-spec. information
 Customer : SCANIA

Engine : DS11 30

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0.8

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6,00x1,50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5,00...5,10
 : (4,95...5,15)
 Contr.-rod trav.mm: 9,00...12,00

Cam sequence : 1-5-3-6-2-4

SD ang. spacing[°]CS: 0-60-120-180-240-300
 Tolerance + - : 0,50 (0,75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

 Contr.-rod trav.mm: 10,80...10,90

 Del.quantity cm3/ : 14,0...14,2

 100H.: (13,7...14,5)

 Dispersion cm3/ : 0,5

 100H.: (0,8)

2nd speed 1/min: 225
 Contr.-rod trav. m: 4,90...5,10
 Del.quantity cm3/ : 1,3...1,7
 100H.: (-)
 Dispersion cm3/ : 0,3
 100H.: (0,6)

SLEEVE POSITION

Control-lever position
 Degree: 45...47
 Speed 1/min: 800
 Cont.-rod travelmm: 15,20...17,80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 700
 Charge press. hPa : 900
 Del.quantity cm3/ : 140,0...142,0
 1000H.: (137,0...145,0)
 Dispersion cm3/ : 5,0
 1000H.: (8,0)

HIGHEST RATED SPEED

1st version
 Control-lever
 position degrees: 35...43

Setting point:
 Speed 1/min : 800
 Contr.-rod trav.mm: 16,5

Testing:
 1st c-rod trav.mm : 9,80
 Speed 1/min : 1045...1060
 2nd c-rod trav.mm : 4,00
 Speed 1/min : 1175...1205

4th speed 1/min : 1300
C-rod trav.mm : 0,00...1,00

LOWEST RATED SPEED I

Control-lever
position degrees: 5...13
Setting point w/out aux. spring
Speed 1/min : 225
Contr.-rod trav.mm: 4,50

Testing:

Speed 1/min : 100
C-rod trav.mm min : 5,90
Speed 1/min : 225
C-rod trav.mm : 4,50
C-rod trav.mm : 2,00
Speed 1/min : 300...340

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 900
Contr.-rod trav.mm: 11,70...11,80

Measurement

Speed 1/min : 500
1st pressure hPa : -
C-rod trav.mm : 10,40...10,50
2nd pressure hPa : 165
C-rod trav.mm : 10,50...10,70

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 900
Speed 1/min : 1000
Del.quantity cm3/ : 143,0...151,0
1000H.: (141,0...153,0)
Speed 1/min : 500
Del.quantity cm3/ : 120,0...124,0
1000H.: (118,0...126,0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 9,80
Speed 1/min : 1045...1060

STARTING FUEL DELIVERY

Speed 1/min : 100

A02

Del.quantity cm3/ : 240,0...290,0
1000H.: (-)
Contr.-rod trav.mm: 20,00...21,00

LOW IDLE

Speed 1/min : 225
Contr.-rod trav.mm: 4,40...4,60

Delivery-valve spring pre-tension
3.2...3.4 mm.

Permissible alteration of 3.0...3.5 mm
Because of flattening, set the spring
preload on new delivery-valve holders
to 2.9...3.1 mm.

ADDITIONAL INFORMATION

Check and set without ROBO diaphragm

For comb. with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

Test specifications approved by Scania
on 1986-06-04
Start of delivery - engine: 15° before
TDC
Firing sequence of engine:
1-5-3-6-2-4.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VOL 12,1 C
Edition : 26.06.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 402 646 829
Injection pump
Pump designation : PE6P130A32ORS7113
EP type number : 0 412 636 803
Governor
Governor design. : RQ250/775PA770
Governor no. : 0 421 801 316

Customer-spec. information
Customer : VOLVO

Engine : TJD121LG

1st version kW : 300.0
Speed 1/min: 1550

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.00...3.10
 : (2.95...3.15)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 750

Contr.-rod trav.mm: 13.20...13.30

Del.quantity cm3/ : 29.5...29.8

100H.: (29.2...30.2)

Dispersion cm3/ : 0.6

100H.: (1.0)

2nd speed 1/min: 250

Contr.-rod trav. m: 4.00...4.20

Del.quantity cm3/ : 1.7...2.3

100H.: (-)

Dispersion cm3/ : 0.4

100H.: (0.8)

SLEEVE POSITION

Control-lever position

Degree: 45...47

Speed 1/min: 600

Contr.-rod travelmm: 19.20...20.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 750

Charge press. hPa : -

Del.quantity cm3/ : 295.5...298.5

1000H.: (292.0...302.0)

Dispersion cm3/ : 6.00

1000H.: (10.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 30...38

Setting point:

Speed 1/min : 600

Contr.-rod trav.mm: 20.0

Testing:

1st c-rod trav.mm : 12.20

Speed 1/min : 820...835
2nd c-rod trav.mm : 4.00
Speed 1/min : 865...895
4th speed 1/min : 950
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 5...13
Setting point w/out aux. spring
Speed 1/min : 250
Contr.-rod trav.mm: 4.10

Testing:

Speed 1/min : 100
C-rod trav.mm min : 5.50
Speed 1/min : 250
C-rod trav.mm : 4.10
C-rod trav.mm : 2.00
Speed 1/min : 280...320

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 12.20
Speed 1/min : 820...835

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 310.0...350.0
1000H.: (306.0...356.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VOL 16,0 A
Edition : 24.07.87
Superceeded : 9.86
Calibrating oil : ISO-4113
Combination no. : 0 402 646 832
Injection pump
Pump designation : PE6P130A72ORS7122
EP type number : 0 412 636 804
Governor
Governor design. : RQV225...930PA799
Governor no. : 0 421 813 544

Customer-spec. information
Customer : VOLVO

Engine : TD162 F

1st version kW : 343.0
Speed 1/min: 1860

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 3.60...3.70
 : (3.55...3.75)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 12.90...13.00

Del.quantity cm3/ : 27.4...27.7

100H.: (27.1...28.1)

Dispersion cm3/ : 0.6

100H.: (1.0)

2nd speed 1/min: 250

Contr.-rod trav. m: 5.00...5.20

Del.quantity cm3/ : 2.5...3.0

100H.: (2.3...3.3)

Dispersion cm3/ : 0.5

100H.: (0.8)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 250

Sleeve travel mm: 1.00...1.40

2nd speed 1/min: 350

Sleeve travel mm: 2.10...2.70

3rd speed 1/min: 700

Sleeve travel mm: 6.40...6.60

4th speed 1/min: 960

Sleeve travel mm: 7.60...7.80

5th speed 1/min: 1045

Sleeve travel mm: 9.00...9.40

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1010

Contr.-rod travelmm: 6.70...9.30

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Charge press. hPa : 700

Del.quantity cm3/ : 274.5...277.5
1000H.: (271.0...281.0)
Dispersion cm3/ : 6.00
1000H.: (10.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 57...65

Testing:

1st c-rod trav.mm : 11.90
Speed 1/min : 960...972
2nd c-rod trav.mm : 4.00
Speed 1/min : 1030...1060
4th speed 1/min : 1150
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 5...13

Testing:

Speed 1/min : 100
C-rod trav.mm min : 6.50
Speed 1/min : 250
C-rod trav.mm : 5.00...5.20

CONSTANT REGULATION

Speed 1/min : 225...400

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 700
Contr.-rod trav.mm: 12.90...13.00

Measurement

Speed 1/min : 500
1st pressure hPa : -
C-rod trav.mm : 9.70...9.80
2nd pressure hPa : 80
C-rod trav.mm : 10.00...10.10
3rd pressure hPa : 540
C-rod trav.mm : 12.50...12.70

FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -
Speed 1/min : 700
Del.quantity cm3/ : 182.5...185.5
1000H.: (179.0...189.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 11.90
Speed 1/min : 960...972

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 125.0...145.0
1000H.: (-)
Contr.-rod trav.mm: 9.70...9.80

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 5.00...5.20
Del.quantity cm3/ : 25.5...30.5
1000H.: (23.0...33.0)
Dispersion cm3/ : 5.00
1000H.: (8.00)

Delivery-valve spring pre-tension
3.2...3.4 mm.

Permissible alteration of 3.0...3.5 mm
Because of flattening, set the spring
preload on new delivery-valve holders
to 2.9...3.1 mm.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 11,0 V6
 Edition : 09.03.87
 Superceeded : 9.86
 Calibrating oil : ISO-4113
 Combination no. : 0 402 646 834
 Injection pump
 Pump designation : PE6P120A72ORS7004
 EP type number : 0 412 626 801
 Governor
 Governor design. : RQ1020PAS28-3
 Governor no. : 0 421 801 348

Customer-spec. information
 Customer : SAAB-SCANIA

Engine : DS11 48.DSI11 47

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0.8

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.00...5.10
 : (4.95...5.15)
 Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
 Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 970

 Contr.-rod trav.mm: 12.80...12.90

 Del.quantity cm3/ : 21.4...21.6

 100H.: (21.1...21.9)

 Dispersion cm3/ : 0.6

 100H.: (0.9)

SLEEVE POSITION

Control-lever position
 Degree: 45...47
 Speed 1/min: 600
 Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 970
 Del.quantity cm3/ : 214.0...216.0
 1000H.: (211.0...219.0)
 Dispersion cm3/ : 6.00
 1000H.: (9.00)

HIGHEST RATED SPEED

1st version
 Control-lever
 position degrees: 20...28

Setting point:
 Speed 1/min : 600
 Contr.-rod trav.mm: 16.5

Testing:
 1st c-rod trav.mm : 11.80
 Speed 1/min : 1020...1025
 2nd c-rod trav.mm : 4.00
 Speed 1/min : 1066...1081
 4th speed 1/min : 1120
 C-rod trav.mm : 0.00...1.00

ROTATIONAL-SPEED LIMITATION

1st version

Imm control-rod travel less than

full-load trav.mm: 11.80
Speed 1/min : 1020...1025

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 240.0...290.0
1000H.: (-)
Contr.-rod trav.mm: 20.00...21.00

HIGH IDLE

Contr.-rod trav.mm: 4.90...5.10
Dispersion cm3/ : 4.00
1000H.: (7.00)

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : STE 12,0 E
Edition : 09.03.87
Superceeded : 9.86
Calibrating oil : ISO-4113

Combination no. : 0 402 646 835

Injection pump
Pump designation : PE6P120A72ORS7123
EP type number : 0 412 626 814
Governor
Governor design. : RQ300/1100PA784-1
Governor no. : 0 421 801 349

Customer-spec. information
Customer : STEYR

Engine : WD615.68

1st version kW : 228.0
Speed 1/min: 2200

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.90...5.00
 : (4.85...5.05)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1100

Contr.-rod trav.mm: 10.20...10.30

Del.quantity cm3/ : 17.0...17.2

100H.: (16.7...17.5)

Dispersion cm3/ : 0.6

100H.: (1.0)

2nd speed 1/min: 300

Contr.-rod trav. m: 6.30...6.50

Del.quantity cm3/ : 1.5...2.1

100H.: (-)

Dispersion cm3/ : 0.8

100H.: (1.2)

SLEEVE POSITION

Control-lever position
Degree: 45...47

Speed 1/min: 600

Contr.-rod travelmm: 15.60...16.40

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1100

Charge press. hPa : 1200

Del.quantity cm3/ : 170.0...172.0

1000H.: (167.0...175.0)

Dispersion cm3/ : 6.00

1000H.: (10.00)

HIGHEST RATED SPEED

1st version

Control-lever
position degrees: 30...38

Setting point:

Speed 1/min : 600

Contr.-rod trav.mm: 16.0

Testing:

1st c-rod trav.mm : 9.20

Speed 1/min : 1145...1160
2nd c-rod trav.mm : 4.00
Speed 1/min : 1185...1215
4th speed 1/min : 1300
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 9...19
Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 6.40

Testing:

Speed 1/min : 100
C-rod trav.mm min : 7.80
Speed 1/min : 300
C-rod trav.mm : 6.40
C-rod trav.mm : 2.00
Speed 1/min : 405...445

TORQUE CONTROL

Dimension a mm : 0.55
Torque-control curve - 1st version
1st speed 1/min : 1100
C-rod trav.mm : 10.20...10.30
2nd speed 1/min : 700
C-rod trav.mm : 11.10...11.30
3rd speed 1/min : 1020
C-rod trav.mm : 10.30...10.50
4th speed 1/min : 960
C-rod trav.mm : 10.70...10.90

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 1200
Contr.-rod trav.mm: 10.90...11.00

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 8.50...8.60
2nd pressure hPa : 640
C-rod trav.mm : 10.40...10.50
3rd pressure hPa : 460
C-rod trav.mm : 9.50...9.70

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press, hPa : 1200
Speed 1/min : 700
Del.quantity cm3/ : 182.0...188.0
1000H.: (179.0...191.0)

Charge press. hPa : -
Speed 1/min : 700
Del.quantity cm3/ : 121.0...123.0
1000H.: (118.0...126.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 9.20
Speed 1/min : 1145...1160

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 230.0...260.0
1000H.: (-)
Contr.-rod trav.mm: 20.00...21.00

Remarks:

Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm
Because of flattening, set the spring
preload on new delivery-valve holders
to 2.9...3.1 mm.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VOL 16,0 B
Edition : 03.04.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 402 646 837
Injection pump
Pump designation : PE6P130A72ORS7134
EP type number : 0 412 636 805
Governor
Governor design. : RQV225...930PA849
Governor no. : 0 421 813 600

Customer-spec. information
Customer : VOLVO

Engine : TD160

1st version kW : 320.0
Speed 1/min: 1860

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.60...3.70
 : (3.55...3.75)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 12.90...13.00

Del.quantity cm3/ : 27.5...27.7

100H.: (27.1...28.1)

Dispersion cm3/ : 0.6

100H.: (1.0)

2nd speed 1/min: 225.0

Contr.-rod trav. m: 5.1...5.3

Del.quantity cm3/ : 2.5...2.9

100H.: (2.2...3.2)

Dispersion cm3/ : 0.4

100H.: (0.8)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 225

Sleeve travel mm: 0.90...1.00

2nd speed 1/min: 440

Sleeve travel mm: 3.60...3.90

3rd speed 1/min: 750

Sleeve travel mm: 6.40...6.60

4th speed 1/min: 980

Sleeve travel mm: 7.90...8.10

5th speed 1/min: 1050

Sleeve travel mm: 9.20...9.40

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1010

Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Charge press. hPa : 700

Del.quantity cm3/ : 275.0...277.0
1000H.: (271.0...281.0)
Dispersion cm3/ : 6.00
1000H.: (10.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 58...66

Testing:

1st c-rod trav.mm : 11.90

Speed 1/min : 975...985

2nd c-rod trav.mm : 4.00

Speed 1/min : 1040...1070

4th speed 1/min : 1200

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 5...13

Testing:

Speed 1/min : 100

C-rod trav.mm min : 6.60

Speed 1/min : 225

C-rod trav.mm : 5.10...5.30

CONSTANT REGULATION

Speed 1/min : 225...390

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 700

Contr.-rod trav.mm: 12.90...13.00

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 9.70...9.80

2nd pressure hPa : 560

C-rod trav.mm : 12.70...12.80

3rd pressure hPa : 90

C-rod trav.mm : 10.00...10.20

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 700

Del.quantity cm3/ : 182.0...186.0

1000H.: (179.0...189.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 11.90

Speed 1/min : 975...985

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 125.0...145.0

1000H.: (-)

Contr.-rod trav.mm: 9.70...9.80

LOW IDLE

Speed 1/min : 225

Contr.-rod trav.mm: 5.10...5.30

Del.quantity cm3/ : 25.0...29.0

1000H.: (22.0...32.0)

Dispersion cm3/ : 4.00

Delivery-valve spring pre-tension
3.2...3.4 mm.

Permissible alteration of 3.0...3.5 mm
Because of flattening, set the spring
preload on new delivery-valve holders
to 2.9...3.1 mm.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 11,0 T
Edition : 14.08.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 402 646 838

Injection pump
Pump designation : PE6P120A320LS7808
EP type number : 0 412 626 816
Governor
Governor design. : RQ300/1050PA762-4
Governor no. : 0 421 801 390

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM441 LA

1st version kW : 240.0
Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.30...5.40
 : (5.25...5.45)
Contr.-rod trav.mm: 20.00...21.00
Cam sequence : 6- 3- 5- 2- 4- 1
 -

SD ang. spacing°CS: 0-60-120-180-240-300
 -360

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 6

BASIC SETTING

1st speed 1/mi: 600

Contr.-rod trav.mm: 13.90...14.10

Del.quantity cm3/ : 21.1...21.3

100H.: (20.8...21.6)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 5.7...6.0

Del.quantity cm3/ : 1.6...2.2

100H.: (1.3...2.5)

Dispersion cm3/ : 0.6

100H.: (1.0)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 1.50...1.70

2nd speed 1/min: 600

Sleeve travel mm: 5.90...6.10

3rd speed 1/min: 875

Sleeve travel mm: 6.20...6.30

4th speed 1/min: 1100

Sleeve travel mm: 6.60...6.80

5th speed 1/min: 1200

Sleeve travel mm: 9.80...10.20

SLEEVE POSITION

Control-lever position

Degree: 108...110

Speed 1/min: 600

Contr.-rod travelmm: 19.20...20.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 600
Charge press. hPa : 900
Del.quantity cm3/ : 211.0...213.0
1000H.: (208.0...216.0)
Dispersion cm3/ : 5.00
1000H.: (9.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 36...44

Setting point:

Speed 1/min : 600
Contr.-rod trav.mm: 20.0

Testing:

1st c-rod trav.mm : 13.80
Speed 1/min : 1095...1110
2nd c-rod trav.mm : 4.00
Speed 1/min : 1180...1210
4th speed 1/min : 1300
C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Control-lever
position degrees: 8...16
Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 5.85

Testing:

Speed 1/min : 200
C-rod trav.mm min : 7.50
Speed 1/min : 300
C-rod trav.mm : 5.85
C-rod trav.mm : 2.00
Speed 1/min : 370...410

TORQUE CONTROL

Dimension a mm : 0.30
2nd speed 1/min : 1050
C-rod trav.mm : 14.80...15.00
3rd speed 1/min : 800
C-rod trav.mm : 15.10...15.30

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 600
Pressure hPa : 800
Contr.-rod trav.mm: 13.90...14.10

Measurement

Speed 1/min : 600

1st pressure hPa : 300
C-rod trav.mm : 10.80...11.00
2nd pressure hPa : 550
C-rod trav.mm : 12.60...12.80
3rd pressure hPa : 1050
C-rod trav.mm : 14.00...14.10
4th pressure hPa : 1150
C-rod trav.mm : 14.50...14.70

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 1350
Speed 1/min : 1050
Del.quantity cm3/ : 236.0...239.0
1000H.: (233.0...242.0)
Dispersion cm3/ : 8.0
1000H.: (12.0)
Charge press. hPa : 1350
Speed 1/min : 800
Del.quantity cm3/ : 242.0...246.0
1000H.: (239.0...249.0)
Dispersion cm3/ : 8.0
1000H.: (12.0)
Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 135.0...137.0
1000H.: (132.0...140.0)
Dispersion cm3/ : 8.0
1000H.: (12.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 13.80
Speed 1/min : 1095...1110

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 190.0...210.0
1000H.: (186.0...214.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 11,0 T1
Edition : 09.03.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 402 646 840

Injection pump
Pump designation : PE6P120A320LS7808-1
EP type number : 0 412 626 817
Governor
Governor design. : RQ325/1050PA762-3
Governor no. : 0 421 801 381

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM441 LA

1st version kW : 240.0
Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 2.5...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Contr.-rod trav.mm: 20.00...21.00
Cam sequence : 6- 3- 5- 2- 4- 1
 -

SD ang. spacing⁰CS: 0-45-120-165-240-285

-360
Tolerance + - ⁰ : 0.50 (0.75)

SD mark cyl. no. : 6

BASIC SETTING

1st speed 1/mi: 600

Contr.-rod trav.mm: 14.50...14.70

Del.quantity cm3/ : 20.9...21.1

100H.: (20.6...21.4)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 325.0

Contr.-rod trav. m: 6.4...6.6

Del.quantity cm3/ : 1.6...2.2
100H.: (1.3...2.5)

Dispersion cm3/ : 0.6
100H.: (1.0)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300
Sleeve travel mm: 1.50...1.70

2nd speed 1/min: 600
Sleeve travel mm: 5.90...6.10

3rd speed 1/min: 875
Sleeve travel mm: 6.20...6.30

4th speed 1/min: 1100
Sleeve travel mm: 6.60...6.80

5th speed 1/min: 1200
Sleeve travel mm: 9.80...10.20

SLEEVE POSITION

Control-lever position
Degree: 108...110

Speed 1/min: 600
Contr.-rod travelmm: 19.20...20.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

A16

1st version

Speed 1/min: 600
Charge press. hPa : 800
Del.quantity cm3/ : 209.0...211.0
1000H.: (206.0...214.0)
Dispersion cm3/ : 5.00
1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Control-lever
position degrees: 36...44

Setting point:

Speed 1/min : 600
Contr.-rod trav.mm: 20.0

Testing:

1st c-rod trav.mm : 14.40
Speed 1/min : 1095...1110
2nd c-rod trav.mm : 4.00
Speed 1/min : 1195...1225
4th speed 1/min : 1300
C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Control-lever
position degrees: 8...16
Setting point w/out aux. spring
Speed 1/min : 325
Contr.-rod trav.mm: 6.5

Testing:

Speed 1/min : 100
C-rod trav.mm min : 8.00
Speed 1/min : 325
C-rod trav.mm : 6.50
C-rod trav.mm : 2.00
Speed 1/min : 405...445

TORQUE CONTROL

Dimension a mm : 0.30
2nd speed 1/min : 1050
C-rod trav.mm : 15.40...15.60
3rd speed 1/min : 800
C-rod trav.mm : 15.70...15.90

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 600
Pressure hPa : 800
Contr.-rod trav.mm: 14.50...14.70

Measurement

Speed 1/min : 600

1st pressure hPa : 300
C-rod trav.mm : 12.20...12.40
2nd pressure hPa : 450
C-rod trav.mm : 13.30...13.50
3rd pressure hPa : 900
C-rod trav.mm : 14.60...14.70
4th pressure hPa : 1100
C-rod trav.mm : 15.30...15.50

SWITCH-OVER POINT

Speed 1/min : 245 (265)

FUEL-DELIVERY CHARACTERISTICS

1st version
Charge press. hPa : 1300
Speed 1/min : 1050
Del.quantity cm3/ : 231.0...234.0
1000H.: (228.0...237.0)
Dispersion cm3/ : 8.0
1000H.: (12.0)
Charge press. hPa : 1300
Speed 1/min : 800
Del.quantity cm3/ : 234.0...238.0
1000H.: (231.0...241.0)
Dispersion cm3/ : 8.0
1000H.: (12.0)
Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 133.0...135.0
1000H.: (130.0...138.0)
Dispersion cm3/ : 8.0
1000H.: (12.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 14.40
Speed 1/min : 1095...1110

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 190.0...210.0
1000H.: (186.0...214.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 11,0 T2
Edition : 27.03.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 402 646 843

Injection pump
Pump designation : PE6P120A32OLS7808
EP type number : 0 412 626 816
Governor
Governor design. : RQV300...1050PA797-2
Governor no. : 0 421 813 614

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM441 LA

1st version kW : 240.0
Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values _ _ _ _

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.30...5.40
 : (5.25...5.45)
 Contr.-rod trav.mm: 20.00...21.00
 Cam sequence : 6- 3- 5- 2- 4- 1
 -

SD ang. spacing°CS: 0-60-120-180-240-300

-360
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 6

BASIC SETTING

1st speed 1/mi: 600

Contr.-rod trav.mm: 13.80...14.00

Del.quantity cm3/ : 20.9...21.1

100H.: (20.6...21.4)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 5.5...5.8

Del.quantity cm3/ : 1.6...2.2
100H.: (1.3...2.5)

Dispersion cm3/ : 0.6

100H.: (1.0)

(B) Setting of injection pump with
externally-mounted governor**SLEEVE TRAVELS**1st speed 1/min: 300
Sleeve travel mm: 1.20...1.402nd speed 1/min: 600
Sleeve travel mm: 4.90...5.103rd speed 1/min: 1075
Sleeve travel mm: 7.40...7.604th speed 1/min: 1100
Sleeve travel mm: 8.00...8.405th speed 1/min: 1150
Sleeve travel mm: 9.00...9.40**SLEEVE POSITION**Control-lever position
Degree: -1

Speed 1/min: 600

Contr.-rod travelmm: 15.80...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 600
 Charge press. hPa : 800
 Del.quantity cm3/ : 209.0...211.0
 1000H.: (206.0...214.0)
 Dispersion cm3/ : 5.00
 1000H.: (9.00)

HIGHEST RATED SPEED**1st version**Control-lever
position degrees: 36...44**Testing:**1st c-rod trav.mm : 13.60
Speed 1/min : 1095...11102nd c-rod trav.mm : 4.00
Speed 1/min : 1170...12004th speed 1/min : 1300
C-rod trav.mm : 0.00...1.50**LOWEST RATED SPEED I**Control-lever
position degrees: 8...16**Testing:**

Speed 1/min : 100
 C-rod trav.mm min : 7.00
 Speed 1/min : 300
 C-rod trav.mm : 5.50...5.80

CONSTANT REGULATION

Speed 1/min : 300...450

TORQUE CONTROL

Dimension a mm : 0.30
 2nd speed 1/min : 1050
 C-rod trav.mm : 14.60...14.80
 3rd speed 1/min : 800
 C-rod trav.mm : 14.90...15.10

compensator (LDA,ADA,ALDA)

1st version**Setting**

Speed 1/min : 600
 Pressure hPa : 800
 Contr.-rod trav.mm: 13.80...14.00

Measurement

Speed 1/min : 600

1st pressure hPa : 300
C-rod trav.mm : 10.70...10.902nd pressure hPa : 550
C-rod trav.mm : 12.60...12.803rd pressure hPa : 975
C-rod trav.mm : 13.90...14.00

4th pressure hPa : 1100
C-rod trav.mm : 14.40...14.60

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 1300
Speed 1/min : 1050
Del.quantity cm3/ : 231.0...234.0
1000H.: (228.0...237.0)

Dispersion cm3/ : 8.0
1000H.: (12.0)

Charge press. hPa : 1300
Speed 1/min : 800
Del.quantity cm3/ : 238.0...242.0
1000H.: (235.0...245.0)

Dispersion cm3/ : 8.0
1000H.: (12.0)

Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 133.0...135.0
1000H.: (130.0...138.0)

Dispersion cm3/ : 8.0
1000H.: (12.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 13.60
Speed 1/min : 1095...1110

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 190.0...210.0
1000H.: (186.0...214.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 11,1 C
 Edition : 14.08.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 402 646 845
 Injection pump
 Pump designation : PE6P120A72ORS7139
 EP type number : 0 412 626 819
 Governor
 Governor design. : RQV200...1000PA725-2
 Governor no. : 0 421 813 632

Customer-spec. information
 Customer : SAAB-SCANIA

Engine : DSC11 13

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0.8

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values _ _ _ _

START OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 5.00...5.10
 : (4.95...5.15)
 Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 15.20...15.30

Del.quantity cm3/ : 23.6...23.8

100H.: (23.3...24.1)

Dispersion cm3/ : 0.6

100H.: (0.9)

2nd speed 1/min: 225.0

Contr.-rod trav. m: 5.1...5.7

Del.quantity cm3/ : 1.8...2.2
100H.: (1.6...2.4)

Dispersion cm3/ : 0.3
100H.: (0.6)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 225
Sleeve travel mm: 1.20...1.60

2nd speed 1/min: 350
Sleeve travel mm: 2.40...3.00

3rd speed 1/min: 700
Sleeve travel mm: 4.80...5.40

4th speed 1/min: 1045
Sleeve travel mm: 8.40...8.60

5th speed 1/min: 1170
Sleeve travel mm: 10.10...10.50

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1040

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Charge press. hPa : 900

Del.quantity cm3/ : 236.0...238.0
1000H.: (233.0...241.0)

Dispersion cm3/ : 6.00
1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 59...67

Testing:

1st c-rod trav.mm : 14.20

Speed 1/min : 1040...1050

2nd c-rod trav.mm : 4.00

Speed 1/min : 1165...1195

4th speed 1/min : 1300

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 7...15

Testing:

Speed 1/min : 125

C-rod trav.mm min : -

Speed 1/min : 225

C-rod trav.mm : 5.10...5.70

CONSTANT REGULATION

Speed 1/min : 225...500

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 900

Contr.-rod trav.mm: 15.20...15.30

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 12.30...12.70

2nd pressure hPa : 535

C-rod trav.mm : 14.60...14.70

3rd pressure hPa : 290

C-rod trav.mm : 13.10...13.30

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 900

Speed 1/min : 1000

Del.quantity cm3/ : 226.0...234.0

1000H.: (224.0...236.0)

Charge press. hPa : -

Speed 1/min : 500

Del.quantity cm3/ : 169.0...173.0

1000H.: (167.0...175.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 14.20
Speed 1/min : 1040...1050

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 240.0...290.0
1000H.: (-)
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 225
Contr.-rod trav.mm: 5.10...5.70
Del.quantity cm3/ : 18.0...22.0
1000H.: (16.0...24.0)
Dispersion cm3/ : 3.00
1000H.: (6.00)

Remarks:
Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm
Because of flattening, set the spring
preload on new delivery-valve holders
to 2.9...3.1 mm.

ADDITIONAL INFORMATION

Check and set without ROBO diaphragm

For comb. with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

Test specifications approved by Scania
1987-07-01
Start of delivery - engine: 15° before
TDC

A23

Firing sequence of engine:
1-5-3-6-2-4.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VOL 16,2 A
 Edition : 02.06.87
 Superseded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 402 646 849
 Injection pump
 Pump designation : PE6P130A32ORS7137
 EP type number : 0 412 636 806
 Governor
 Governor design. : RQ750PA865
 Governor no. : 0 421 801 401

Customer-spec. information
 Customer : VOLVO

Engine : TID162 AG

1st version kW : 350.0
 Speed 1/min: 1500

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0.8

Test inj. tubing : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.60...3.70
 : (3.55...3.75)
 Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 11.40...11.50

Del.quantity cm3/ : 34.1...34.3

100H.: (33.8...34.6)

Dispersion cm3/ : 0.5

100H.: (0.9)

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 700
 Del.quantity cm3/ : 341.0...343.0
 1000H.: (338.0...346.0)
 Dispersion cm3/ : 5.00
 1000H.: (9.00)

HIGHEST RATED SPEED

1st version
 Control-lever
 position degrees: 18...26

Testing:
 1st c-rod trav.mm : 10.40
 Speed 1/min : 750...755
 2nd c-rod trav.mm : 4.00
 Speed 1/min : 777...785
 4th speed 1/min : 840
 C-rod trav.mm : 0.00...1.00

ROTATIONAL-SPEED LIMITATION

1st version
 1mm control-rod travel less than

full-load trav.mm: 10.40
 Speed 1/min : 750...755

STARTING FUEL DELIVERY

Speed 1/min : 100

HIGH IDLE

Speed 1/min : 781

Dispersion cm3/ : 5.00

1000H.: (7.00)

Remarks:

APPLICATION

Generator

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 55...63

Testing:

1st c-rod trav.mm : 9.20

Speed 1/min : 920...925

2nd c-rod trav.mm : 4.00

Speed 1/min : 970...1000

4th speed 1/min : 1100

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 6...14

Testing:

Speed 1/min : 100

C-rod trav.mm min : 4.90

Speed 1/min : 225

C-rod trav.mm : 3.40...3.60

CONSTANT REGULATION

Speed 1/min : 250...330

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 9.20

Speed 1/min : 920...925

Remarks:

Delivery-valve spring pre-tension

3.2...3.4 mm.

Permissible alteration of 3.0...3.5 mm

Because of flattening, set the spring

preload on new delivery-valve holders

to 2.9...3.1 mm.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 14,2 B1
Edition : 09.03.87
Superceeded : 9.84
Calibrating oil : ISO-4113
Combination no. : 0 402 648 803
Injection pump
Pump designation : PE8P120A920/4LS7003
EP type number : 0 412 628 801
Governor
Governor design. : RQ750PA528
Governor no. : 0 421 801 126

Customer-spec. information
Customer : SAAB-SCANIA

Engine : DS14 41. DSI14 42 43

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.8

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 5.00...5.10
: (4.95...5.15)
Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 2- 7- 3- 4- 5-
6- 8

SD ang. spacing°CS: 0-45-90-135-180-225-
270-315
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700
Contr.-rod trav.mm: 12.80...12.90
Del.quantity cm3/ : 18.7...18.9
100H.: (18.4...19.2)
Dispersion cm3/ : 0.6
100H.: (0.9)

SLEEVE POSITION

Control-lever position
Degree: 45...47
Speed 1/min: 600
Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 700
Del.quantity cm3/ : 187.0...189.0
1000H.: (184.0...192.0)
Dispersion cm3/ : 6.00
1000H.: (9.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 21...29

Setting point:
Speed 1/min : 600
Contr.-rod trav.mm: 16,5

Testing:
1st c-rod trav.mm : 11.80
Speed 1/min : 750...755
2nd c-rod trav.mm : 4.00
Speed 1/min : 784...797
4th speed 1/min : 850
C-rod trav.mm : 0.00...1.00

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 11.80
Speed 1/min : 750...755

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 240.0...290.0
1000H.: (-)
Contr.-rod trav.mm: 20.00...21.00

HIGH IDLE

Contr.-rod trav.mm: 4.90...5.10
Dispersion cm3/ : 4.00
1000H.: (7.00)

Remarks:

ADDITIONAL INFORMATION

Check and set without R080 diaphragm

For comb. with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

Test specifications approved by Scania
on 1986-06-04

Start of delivery - engine:

DS 14 - 18° before TDC

DSI 14 - 17° before TDC

Engine firing sequence: 1-5-4-2-6-3-7-8

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 14,2 B2
 Edition : 09.03.87
 Superceeded : 9.84
 Calibrating oil : ISO-4113
 Combination no. : 0 402 648 805
 Injection pump
 Pump designation : PE8P120A920/4LS7003
 EP type number : 0 412 628 801
 Governor
 Governor design. : RQ10S0PA528
 Governor no. : 0 421 801 128

Customer-spec. information
 Customer : SAAB-SCANIA

Engine : DS14 41,DSI14 43

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0.8

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.00...5.10
 : (4.95...5.15)
 Contr.-rod trav.mm: 9.00...12.00

B02

Cam sequence : 1- 2- 7- 3- 4- 5-
 6- 8

SD ang. spacing°CS: 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1000

 Contr.-rod trav.mm: 12.80...12.90

 Del.quantity cm3/ : 19.9...20.1

 100H.: (19.6...20.4)

 Dispersion cm3/ : 0.6

 100H.: (0.9)

SLEEVE POSITION

Control-lever position
 Degree: 45...47
 Speed 1/min: 600
 Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 1000
 Del.quantity cm3/ : 199.0...201.0
 1000H.: (196.0...204.0)
 Dispersion cm3/ : 6.00
 1000H.: (9.00)

HIGHEST RATED SPEED

1st version
 Control-lever
 position degrees: 20...28

Setting point:
 Speed 1/min : 600
 Contr.-rod trav.mm: 16.5

Testing:
 1st c-rod trav.mm : 11.80
 Speed 1/min : 1050...1055
 2nd c-rod trav.mm : 4.00
 Speed 1/min : 1098...1113
 4th speed 1/min : 1150
 C-rod trav.mm : 0.00...1.00

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 11.80
Speed 1/min : 1050...1055

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 240.0...290.0
1000H.: (-)
Contr.-rod trav.mm: 20.00...21.00

HIGH IDLE

Contr.-rod trav.mm: 4.90...5.10
Dispersion cm3/ : 4.00
1000H.: (7.00)

Remarks:

ADDITIONAL INFORMATION

Check and set without ROBO diaphragm

For comb. with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

Test specifications approved by Scania
on 1986-06-04

Start of delivery - engine:

DS 14 - 18° before TDC

DSI 14 - 17° before TDC

Engine firing sequence: 1-5-4-2-6-3-7-8

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 14,2 D
Edition : 26.8.87
Superceeded : 9.86
Calibrating oil : ISO-4113

Combination no. : 0 402 648 802

Injection pump
Pump designation : PE8P120A920/4LS7008
EP type number : 0 412 628 803
Governor
Governor design. : RQV200...950PA547-1
Governor no. : 0 421 813 360

Customer-spec. information
Customer : SAAB-SCANIA

Engine : DSC14 01

TEST BENCH REQUIREMENTS

Calibrating-pil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.8

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6,00X1,50X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 4,50...4,60
: (4,45...4,65)
Contr.-rod trav.mm: 6,00...8,00

Cam sequence : 1-2-7-3-4-5-6-8

SD ang. spacing°CS: 0-45-90-135-180-225-
270-315
Tolerance + - ° : 0,50 (0,75)

SD mark cyl. no. : 1

START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 7,00...13,90
& c-rod trav max. : 21,00
Difference ° CS : 1,45...2,15

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 13,90...14,00

Del.quantity cm3/ : 19,7...19,9

100H.: (19,4...20,2)

Dispersion cm3/ : 0,7

100H.: (1,0)

2nd speed 1/min: 225
Contr.-rod trav. m: 4,70...4,90
Del.quantity cm3/ : 1,4...1,8

100H.: (-)

Dispersion cm3/ : 0,3

100H.: (0,6)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 225
Sleeve travel mm: 1,30...1,50

2nd speed 1/min: 270
Sleeve travel mm: 1,90...2,10

3rd speed 1/min: 360
Sleeve travel mm: 2,60...3,00

4th speed 1/min: 990
Sleeve travel mm: 7,80...8,00

5th speed 1/min: 1120
Sleeve travel mm: 9,40...9,60

SLEEVE POSITION

Control-lever position
Degree: -1

Speed 1/min: 1040
Contr.-rod travelmm: 15,20...17,80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 700
Charge press. hPa : 900
Del. quantity cm3/ : 197,0...199,0
1000H.: (194,0...202,0)
Dispersion cm3/ : 7,0
1000H.: 10,0

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 56...64

Testing:

1st c-rod trav.mm : 12,90
Speed 1/min : 990...1000
2nd c-rod trav.mm : 4,00
Speed 1/min : 1110...1140
4th speed 1/min : 1250
C-rod trav.mm : 0,00...1,00

LOWEST RATED SPEED I

Control-lever
position degrees: 6...14

Testing:

Speed 1/min : 100
C-rod trav.mm min : 6,20
Speed 1/min : 225
C-rod trav.mm : 4,70...4,90
C-rod trav.mm : 2,00
Speed 1/min : 330...390

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 900
Contr.-rod trav.mm: 13,90...14,00

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 11,00...11,10
2nd pressure hPa : 335
C-rod trav.mm : 13,10...13,20
3rd pressure hPa : 215
C-rod trav.mm : 11,60...11,80

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 900
Speed 1/min : 950
Del. quantity cm3/ : 190,0...198,0
1000H.: (188,0...200,0)

Charge press. hPa : -
Speed 1/min : 500
Del. quantity cm3/ : 146,0...150,0
1000H.: (144,0...152,0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 12,90
Speed 1/min : 990...1000

STARTING FUEL DELIVERY

Speed 1/min : 100
Del. quantity cm3/ : 240,0...290,0
1000H.: (-)
Contr.-rod trav.mm: 20,00...21,00

LOW IDLE

Speed 1/min : 225
Contr.-rod trav.mm: 4,70...4,90
Del. quantity cm3/ : 14,0...18,0
1000H.: (-)
Dispersion cm3/ : 3,0
1000H.: 6,0

Remarks:

Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm
Because of flattening, set the spring
preload on new delivery-valve holders
to 2.9...3.1 mm.

ADDITIONAL INFORMATION

Check and set without ROBO diaphragm

For comb. with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

Test specifications approved by Scania
on 1986-06-09
Start of delivery - engine: 22° before
TDC at control-rod travel = 6.0...
8.0 mm
Engine firing sequence: 1-5-4-2-6-3-7-8

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 14,2 D1
Edition : 27.8.87
Superceeded : 9.86
Calibrating oil : ISO-4113
Combination no. : 0 402 648 811
Injection pump
Pump designation : PE8P120A920/4LS7008
EP type number : 0 412 628 803
Governor
Governor design. : RQV275...950PA547-4
Governor no. : 0 421 813 435

Customer-spec. information
Customer : SAAB-SCANIA

Engine : DSC14 01

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6,00X1,50X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4,50...4,60
: (4,45...4,65)
Contr.-rod trav.mm: 6,00...8,00

807

Cam sequence : 1-2-7-3-4-5-6-8

SD ang. spacing°CS: 0-45-90-135-180-225-
270-315
Tolerance + - ° : 0,50 (0,75)

SD mark cyl. no. : 1

START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 7,00...13,90
& c-rod tray max. : 21,00
Difference ° CS : 1,45...2,15

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 13,90...14,00

Del.quantity cm3/ : 19,7...19,9

100H.: (19,4...20,2)

Dispersion cm3/ : 0,7

100H.: (1,0)

2nd speed 1/min: 275
Contr.-rod trav. m: 4,70...4,90
Dispersion cm3/ : 0,3
100H.: (0,6)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 275
Sleeve travel mm: 1,90...2,10
2nd speed 1/min: 430
Sleeve travel mm: 3,70...4,00
3rd speed 1/min: 500
Sleeve travel mm: 4,80...5,00
4th speed 1/min: 1000
Sleeve travel mm: 7,60...7,80
5th speed 1/min: 1180
Sleeve travel mm: 9,20...9,40

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1100
Contr.-rod travelmm: 15,20...17,80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 700

Charge press. hPa : 900
Del. quantity cm³/ : 197,0...199,0
1000H.: (194,0...202,0)
Dispersion cm³/ : 7,0
1000H.: (10,0)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 55...63

Testing:

1st c-rod trav.mm : 12,90
Speed 1/min : 990...1000
2nd c-rod trav.mm : 4,00
Speed 1/min : 1170...1200
4th speed 1/min : 1300
C-rod trav.mm : 0,00...1,00

LOWEST RATED SPEED I

Control-lever
position degrees: 5...13

Testing:

Speed 1/min : 100
C-rod trav.mm min : 6,20
Speed 1/min : 275
C-rod trav.mm : 4,70...4,90
C-rod trav.mm : 2,00
Speed 1/min : 330...390

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500
Pressure hPa : 900
Contr.-rod trav.mm: 13,90...14,00

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 11,00...11,10
2nd pressure hPa : 335
C-rod trav.mm : 13,10...13,20
3rd pressure hPa : 215
C-rod trav.mm : 11,60...11,80

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 900
Speed 1/min : 950
Del. quantity cm³/ : 190,0...198,0
1000H.: (188,0...200,0)
Speed 1/min : 500

Del. quantity cm³/ : 146,0...150,0
1000H.: (144,0...152,0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 12,90
Speed 1/min : 990...1000

STARTING FUEL DELIVERY

Speed 1/min : 100
Del. quantity cm³/ : 240,0...290,0
1000H.: (-)
Contr.-rod trav.mm: 20,00...21,00

LOW IDLE

Speed 1/min : 275
Contr.-rod trav.mm: 4,70...4,90
Dispersion cm³/ : 3,0
1000H.: (6,0)

Delivery-valve spring pre-tension
3.2...3.4 mm.

Permissible alteration of 3.0...3.5 mm
Because of flattening, set the spring
preload on new delivery-valve holders
to 2.9...3.1 mm.

ADDITIONAL INFORMATION

Check and set without R0B0 diaphragm

For comb. with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

Test specifications approved by Scania
on 1986-06-09
Start of delivery - engine: 22° before

TDC at control-rod travel = 6.0...
8.0 mm
Engine firing sequence: 1-5-4-2-6-3-7-8

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,7 A1
Edition : 02.06.87
Superceeded : 11.86
Calibrating oil : ISO-4113

Combination no. : 0 402 648 812

Injection pump
Pump designation : PE8P120A32OLS7801
EP type number : 0 412 628 806
Governor
Governor design. : RQ300/1050PA717
Governor no. : 0 421 801 258

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM442 LA

1st version kW : 320.0
Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
Contr.-rod trav.mm: 20.00...21.00
Cam sequence : 8- 7- 2- 6- 3- 5-
 4- 1

SD ang. spacing°CS: 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 600

Contr.-rod trav.mm: 14.80...15.00

Del.quantity cm3/ : 21.6...21.8

100H.: (21.3...22.1)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 300

Contr.-rod trav. m: 6.10...6.70

Del.quantity cm3/ : 1.6...2.2

100H.: (1.3...2.5)

Dispersion cm3/ : 0.6

100H.: (1.0)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 2.80...3.00

2nd speed 1/min: 600

Sleeve travel mm: 6.00...6.10

3rd speed 1/min: 900

Sleeve travel mm: 6.10...6.20

4th speed 1/min: 1000

Sleeve travel mm: 6.20...6.30

5th speed 1/min: 1150

Sleeve travel mm: 9.30...9.60

SLEEVE POSITION

Control-lever position

Degree: -2

Speed 1/min: 600

Contr.-rod travelmm: 19.20...20.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 600
Charge press. hPa : 680
Del. quantity cm3/ : 216.0...218.0
1000H.: (213.0...221.0)
Dispersion cm3/ : 5.00
1000H.: (9.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 36...44

Setting point:
Speed 1/min : 600
Contr.-rod trav.mm: 20.0

Testing:
1st c-rod trav.mm : 14.70
Speed 1/min : 1095...1110
2nd c-rod trav.mm : 4.00
Speed 1/min : 1160...1190
4th speed 1/min : 1300
C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Control-lever
position degrees: 9...17
Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 6.4

Testing:
Speed 1/min : 200
C-rod trav.mm min : 8.00
Speed 1/min : 300
C-rod trav.mm : 6.40
C-rod trav.mm : 2.00
Speed 1/min : 380...420

TORQUE CONTROL

Dimension a mm : 0.35
2nd speed 1/min : 1050
C-rod trav.mm : 15.60...15.80
3rd speed 1/min : 850
C-rod trav.mm : 16.00...16.20

compensator (LDA,ADA,ALDA)

1st version
Setting
Speed 1/min : 600
Pressure hPa : 680
Contr.-rod trav.mm: 14.80...15.00

Measurement
Speed 1/min : 600

1st pressure hPa : 310
C-rod trav.mm : 12.20...12.40
2nd pressure hPa : 470
C-rod trav.mm : 13.80...14.00
3rd pressure hPa : 820
C-rod trav.mm : 15.00...15.10
4th pressure hPa : 1100
C-rod trav.mm : 16.00...16.10
5th pressure hPa : -
C-rod trav.mm : 11.60...11.70

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

1st version
Charge press. hPa : 1150
Speed 1/min : 1050
Del. quantity cm3/ : 232.0...235.0
1000H.: (229.0...238.0)
Dispersion cm3/ : 8.0
1000H.: (12.0)
Charge press. hPa : 1150
Speed 1/min : 850
Del. quantity cm3/ : 247.0...251.0
1000H.: (244.0...254.0)
Dispersion cm3/ : 8.0
1000H.: (12.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 14.70
Speed 1/min : 1095...1110

STARTING FUEL DELIVERY

Speed 1/min : 100
Del. quantity cm3/ : 200.0...220.0
1000H.: (196.0...224.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 14,0 G
Edition : 09.03.87
Superceeded : 1.86
Calibrating oil : ISO-4113

Combination no. : 0 402 648 813

Injection pump
Pump designation : PE8P120A920/4LS7108
EP type number : 0 412 628 807
Governor
Governor design. : RQV200...9S0PA736
Governor no. : 0 421 813 467

Customer-spec. information
Customer : SAAB-SCANIA

Engine : DSC14 01

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.8

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.50...4.60
: (4.45...4.65)

Contr.-rod trav.mm: 6.00...8.00

Cam sequence : 1- 2- 7- 3- 4- 5-
6- 8

SD ang. spacing^oCS: 0-45-90-135-180-225-
270-315
Tolerance + - ^o : 0.50 (0.75)

SD mark cyl. no. : 1

START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 7.00...13.90
& c-rod trav max. : 21.00
Difference ^o CS : 1.45...2.15

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 13.90...14.00

Del.quantity cm3/ : 19.7...19.9
100H.: (19.4...20.2)

Dispersion cm3/ : 0.7

100H.: (1.0)

2nd speed 1/min: 225

Contr.-rod trav. m: 4.60...4.80

Del.quantity cm3/ : 1.4...1.8
100H.: (-)

Dispersion cm3/ : 0.3
100H.: (0.6)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 225

Sleeve travel mm: 1.30...1.50

2nd speed 1/min: 270

Sleeve travel mm: 1.80...2.10

3rd speed 1/min: 360

Sleeve travel mm: 2.60...3.00

4th speed 1/min: 990

Sleeve travel mm: 7.80...8.00

5th speed 1/min: 1120

Sleeve travel mm: 9.40...9.70

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1050

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Charge press. hPa : 900

Del.quantity cm3/ : 197.0...199.0
1000H.: (194.0...202.0)

Dispersion cm3/ : 7.00

1000H.: (10.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 56...64

Testing:

1st c-rod trav.mm : 12.90

Speed 1/min : 990...1000

2nd c-rod trav.mm : 4.00

Speed 1/min : 1110...1140

4th speed 1/min : 1250

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 6...14

Testing:

Speed 1/min : 100

C-rod trav.mm min : 6.20

Speed 1/min : 225

C-rod trav.mm : 4.70...4.90

C-rod trav.mm : 2.00

Speed 1/min : 330...390

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 900

Contr.-rod trav.mm: 13.90...14.00

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 11.00...11.10

2nd pressure hPa : 335

C-rod trav.mm : 13.20...13.30

3rd pressure hPa : 215

C-rod trav.mm : 11.60...11.80

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 900

Speed 1/min : 950

Del. quantity cm³/ : 190.0...198.0
1000H.: (188.0...200.0)
Charge press. hPa : -
Speed 1/min : 500
Del. quantity cm³/ : 146.0...150.0
1000H.: (144.0...152.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 12.90
Speed 1/min : 990...1000

STARTING FUEL DELIVERY

Speed 1/min : 100
Del. quantity cm³/ : 240.0...290.0
1000H.: (-)
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 225
Contr.-rod trav.mm: 4.70...4.90

Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm
Because of flattening, set the spring
preload on new delivery-valve holders
to 2.9...3.1 mm.

ADDITIONAL INFORMATION

Check and set without ROBO diaphragm

For comb. with letter index see
VDT-1-400/116.

For sealing see VDT-1-400/117.

Test specifications approved by Scania

on 1985-02-11

Start of delivery - engine: 22° before
TDC at control-rod travel = 6.0...
8.0 mm

Engine firing sequence: 1-5-4-2-6-3-7-8

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MWM 28,8 A
 Edition : 09.03.87
 Superceeded : 10.85
 Calibrating oil : ISO-4113
 Combination no. : 0 402 648 814
 Injection pump
 Pump designation : PE8P120A500/5RS7109
 EP type number : 0 412 628 809
 Governor
 Governor design. : RQV300...1150PA756
 Governor no. : 0 421 813 486

Customer-spec. information
 Customer : MWM

Engine : TBD234V16

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0.8

Test inj. tubing : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
 Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 2- 3- 4- 7- 8-
 5- 6

SD ang. spacing°CS: 0-30-90-120-225-255-
 315-345
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 800
 Contr.-rod trav.mm: 14.90...15.00

Del.quantity cm3/ : 26.0...26.2
 100H.: (25.7...26.5)

Dispersion cm3/ : 0.5
 100H.: (0.9)

2nd speed 1/min: 300
 Contr.-rod trav. m: 6.50...6.70
 Del.quantity cm3/ : 3.0...4.0
 100H.: (2.7...4.3)
 Dispersion cm3/ : 0.6
 100H.: (1.0)

(B) Setting of injection pump with
 externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300
 Sleeve travel mm: 1.30...1.40
 2nd speed 1/min: 360
 Sleeve travel mm: 1.60...2.10
 3rd speed 1/min: 560
 Sleeve travel mm: 2.50...2.90
 4th speed 1/min: 1190
 Sleeve travel mm: 8.30...8.40
 5th speed 1/min: 1280
 Sleeve travel mm: 9.60...9.90

SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed 1/min: 1200
 Cont.-rod travelmm: 15.20...17.80

HIGHEST RATED SPEED

1st version
 Control-lever
 position degrees: 52...60

Testing:

1st c-rod trav.mm : 13.90
 Speed 1/min : 1190...1200
 2nd c-rod trav.mm : 4.00

Speed 1/min : 1270...1300
4th speed 1/min : 1400
C-rod trav.mm : 0.00...1.00

Pump runs in tandem

LOWEST RATED SPEED I

Control-lever
position degrees: 14...22

APPLICATION
Ship

Testing:

Speed 1/min : 100
C-rod trav.mm min : 8.00
Speed 1/min : 300
C-rod trav.mm : 6.50...6.70

CONSTANT REGULATION

Speed 1/min : 300...580

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500
Pressure hPa : 900
Contr.-rod trav.mm: 14.90...15.00

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 9.30...9.50
2nd pressure hPa : 625
C-rod trav.mm : 14.70...14.80
3rd pressure hPa : 250
C-rod trav.mm : 11.30...11.50

SWITCH-OVER POINT

Speed 1/min : 220 (240)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 13.90

Speed 1/min : 1190...1200

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm³/ : 200.0...240.0
1000H.: (-)

Remarks:

Full-load delivery not known. Set
according to engine test report.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 14,2 D2
Edition : 26.8.87
Superceeded : 9.86
Calibrating oil : ISO-4113
Combination no. : 0 402 648 815
Injection pump
Pump designation : PE8P120A920/4LS7008X
EP type number : 0 412 628 812
Governor
Governor design. : RQV200...950PAS47-6
Governor no. : 0 421 813 499

Customer-spec. information
Customer : SAAB-SCANIA

Engine : DSC14 02

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6,00X1,50X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4,50...4,60
: (4,45...4,65)
Contr.-rod trav.mm: 6,00...8,00

Cam sequence : 1-2-7-3-4-5-6-8

SD ang. spacing°CS: 0-45-90-135-180-225-
270-315
Tolerance + - ° : 0,50 (0,75)

SD mark cyl. no. : 1

START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 7,00...12,80
& c-rod tray max. : 21,00
Difference ° CS : 1,05...1,75

BASIC SETTING

1st speed 1/mi: 700
Contr.-rod trav.mm: 12,80...12,90
Del.quantity cm3/ : 18,3...18,5
100H.: (18,0...18,8)
Dispersion cm3/ : 0,7
100H.: (1,0)
2nd speed 1/min: 225
Contr.-rod trav. m: 4,70...4,90
Del.quantity cm3/ : 1,4...1,8
100H.: (-)
Dispersion cm3/ : 0,3
100H.: (0,6)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 225
Sleeve travel mm: 1,30...1,40
2nd speed 1/min: 260
Sleeve travel mm: 1,70...1,90
3rd speed 1/min: 360
Sleeve travel mm: 2,60...3,00
4th speed 1/min: 1000
Sleeve travel mm: 7,90...9,00
5th speed 1/min: 1110
Sleeve travel mm: 9,30...9,50

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1040
Cont.-rod travelmm: 15,20...17,80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700
Charge press. hPa : 900
Del. quantity cm3/ : 183,0...185,0
1000H.: (180,0...188,0)
Dispersion cm3/ : 7,0
1000H.: (10,0)

HIGHEST RATED SPEED

1st version

Control-lever
position degrees: 55...63

Testing:

1st c-rod trav.mm : 11,80
Speed 1/min : 990...1000
2nd c-rod trav.mm : 4,00
Speed 1/min : 1090...1120
4th speed 1/min : 1250
C-rod trav.mm : 0,00...1,00

LOWEST RATED SPEED I

Control-lever
position degrees: 6...14

Testing:

Speed 1/min : 100
C-rod trav.mm min : 6,20
Speed 1/min : 225
C-rod trav.mm : 4,70...4,90
C-rod trav.mm : 2,00
Speed 1/min : 330...390

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 900
Contr.-rod trav.mm: 12,80...12,90

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 11,00...11,10

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 900
Speed 1/min : 950
Del. quantity cm3/ : 177,0...185,0
1000H.: (175,0...187,0)
Speed 1/min : 500
Del. quantity cm3/ : 146,0...150,0
1000H.: (144,0...152,0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 11,80
Speed 1/min : 990...1000

STARTING FUEL DELIVERY

Speed 1/min : 100
Del. quantity cm3/ : 240,0...290,0
1000H.: (-)
Contr.-rod trav.mm: 20,00...21,00

LOW IDLE

Speed 1/min : 225
Contr.-rod trav.mm: 4,70...4,90
Del. quantity cm3/ : 14,0...18,0
1000H.: (-)
Dispersion cm3/ : 3,0
1000H.: (6,0)

Remarks:

Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm
Because of flattening, set the spring
preload on new delivery-valve holders
to 2.9...3.1 mm.

ADDITIONAL INFORMATION

Check and set without R080 diaphragm

For comb. with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

Scania test specifications taken over
on May 3, 1985
Start of delivery - engine: 22° before

TDC at control-rod travel = 6.0...
8.0 mm
Engine firing sequence: 1-5-4-2-6-3-7-8

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,7 A4
 Edition : 14.08.87
 Superseded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 402 648 817
 Injection pump
 Pump designation : PE8P120A320LS7801
 EP type number : 0 412 628 806
 Governor
 Governor design. : RQ300/1050PA762-5
 Governor no. : 0 421 801 399

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM442 A

1st version kW : 260.0
 Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Calibrating nozzle-holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0.8

Test inj. tubing : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
 Contr.-rod trav.mm: 20.00...21.00
 Cam sequence : 8- 7- 2- 6- 3- 5-
 4- 1

SD ang. spacing°CS: 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 600

Contr.-rod trav.mm: 13.90...14.00

Del.quantity cm3/ : 19.6...19.8

100H.: (19.3...20.1)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 6.2...6.6

Del.quantity cm3/ : 1.6...2.2

100H.: (1.3...2.5)

Dispersion cm3/ : 0.6

100H.: (1.0)

(B) Setting of injection pump with
 externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 2.20...2.40

2nd speed 1/min: 600

Sleeve travel mm: 5.90...6.10

3rd speed 1/min: 870

Sleeve travel mm: 6.10...6.30

4th speed 1/min: 1050

Sleeve travel mm: 6.70...6.90

5th speed 1/min: 1170

Sleeve travel mm: 9.20...9.80

SLEEVE POSITION

Control-lever position

Degree: 108...110

Speed 1/min: 600

Contr.-rod travelmm: 19.20...20.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 600
Charge press. hPa : 650
Del.quantity cm3/ : 196.0...198.0
1000H.: (193.0...201.0)
Dispersion cm3/ : 5.00
1000H.: (9.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 36...44

Setting point:
Speed 1/min : 600
Contr.-rod trav.mm: 20.0

Testing:
1st c-rod trav.mm : 11.80
Speed 1/min : 1095...1110
2nd c-rod trav.mm : 4.00
Speed 1/min : 1170...1200
4th speed 1/min : 1300
C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Control-lever
position degrees: 10...18
Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 6.3

Testing:
Speed 1/min : 200
C-rod trav.mm min : 8.00
Speed 1/min : 300
C-rod trav.mm : 6.30
C-rod trav.mm : 2.00
Speed 1/min : 380...420

TORQUE CONTROL

Dimension a mm : 0.75
2nd speed 1/min : 1050
C-rod trav.mm : 12.60...12.80
3rd speed 1/min : 850
C-rod trav.mm : 13.70...13.90
4th speed 1/min : 700
C-rod trav.mm : 14.20...14.50

compensator (LDA,ADA,ALDA)

1st version
Setting
Speed 1/min : 600
Pressure hPa : 650
Contr.-rod trav.mm: 13.90...14.00

Measurement

Speed 1/min : 600
1st pressure hPa : 300
C-rod trav.mm : 12.20...12.40
2nd pressure hPa : 400
C-rod trav.mm : 13.20...13.50
3rd pressure hPa : 850
C-rod trav.mm : 14.00...14.10
4th pressure hPa : -
C-rod trav.mm : 11.50...11.60

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

1st version
Charge press. hPa : 1050
Speed 1/min : 1050
Del.quantity cm3/ : 175.0...178.0
1000H.: (172.0...181.0)
Dispersion cm3/ : 8.0
1000H.: (12.0)
Charge press. hPa : 1050
Speed 1/min : 700
Del.quantity cm3/ : 209.0...213.0
1000H.: (206.0...216.0)
Dispersion cm3/ : 8.0
1000H.: (12.0)
Charge press. hPa : 1050
Speed 1/min : 850
Del.quantity cm3/ : 203.0...207.0
1000H.: (200.0...210.0)
Dispersion cm3/ : 8.0
1000H.: (12.0)
Charge press. hPa : -
Speed 1/min : 500

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 11.80
Speed 1/min : 1095...1110

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 175.0...190.0
1000H.: (171.0...194.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 14,0 G1
Edition : 14.08.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 402 648 822

Injection pump
Pump designation : PE8P120A920/4LS7108
EP type number : 0 412 628 807
Governor
Governor design. : RQV275...950PA736-2
Governor no. : 0 421 813 616

Customer-spec. information
Customer : SAAB-SCANIA

Engine : DSC14 01

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.8

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.50...4.60
: (4.45...4.65)

Contr.-rod trav.mm: 6.00...8.00

Cam sequence : 1- 2- 7- 3- 4- 5-
6- 8

SD ang. spacing^oCS: 0-45-90-135-180-225-
270-315
Tolerance + - ^o : 0.50 (0.75)

SD mark cyl. no. : 1

START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 7.00...14.20
& c-rod tray max. : 21.00
Difference ^o CS : 1.65...2.35

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 13.90...14.00

Del.quantity cm3/ : 19.7...19.9

100H.: (19.4...20.2)

Dispersion cm3/ : 0.7

100H.: (1.0)

2nd speed 1/min: 275.0
Contr.-rod trav. m: 4.6...4.8
Del.quantity cm3/ : 1.4...1.8
100H.: (-)
Dispersion cm3/ : 0.3
100H.: (0.6)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 275
Sleeve travel mm: 1.40...1.50
2nd speed 1/min: 350
Sleeve travel mm: 2.50...2.90
3rd speed 1/min: 550
Sleeve travel mm: 5.00...5.30
4th speed 1/min: 990
Sleeve travel mm: 7.60...7.80
5th speed 1/min: 1100
Sleeve travel mm: 8.50...8.80

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1080
Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 700
Charge press. hPa : 900
Del.quantity cm3/ : 197.0...199.0
1000H.: (194.0...202.0)
Dispersion cm3/ : 7.00
1000H.: (10.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 55...63

Testing:
1st c-rod trav.mm : 12.90
Speed 1/min : 990...1000
2nd c-rod trav.mm : 4.00
Speed 1/min : 1165...1195
4th speed 1/min : 1300
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 6...14

Testing:
Speed 1/min : 100
C-rod trav.mm min : 5.90
Speed 1/min : 275
C-rod trav.mm : 4.40...4.60
C-rod trav.mm : 2.00
Speed 1/min : 320...380

compensator (LDA,ADA,ALDA)

1st version
Setting
Speed 1/min : 500
Pressure hPa : 900
Contr.-rod trav.mm: 13.90...14.00

Measurement
Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 11.00...11.10
2nd pressure hPa : 335
C-rod trav.mm : 13.10...13.20
3rd pressure hPa : 215
C-rod trav.mm : 11.60...11.80

FUEL-DELIVERY CHARACTERISTICS

1st version
Charge press. hPa : 900
Speed 1/min : 950

Del.quantity cm3/ : 190.0...198.0
1000H.: (188.0...200.0)
Speed 1/min : 500
Del.quantity cm3/ : 146.0...150.0
1000H.: (144.0...152.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 12.90
Speed 1/min : 990...1000

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 240.0...290.0
1000H.: (-)
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 275
Contr.-rod trav.mm: 4.40...4.60

Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm
Because of flattening, set the spring
preload on new delivery-valve holders
to 2.9...3.1 mm.

ADDITIONAL INFORMATION

Check and set without ROBO diaphragm

For comb. with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

22° before top dead center with
control-rod travel 6.0...8.0 mm.

Firing sequence of engine:
1-5-3-6-2-4.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MWM 14.4 B
Edition : 09.03.87
Superceeded : 10.85
Calibrating oil : ISO-4113
Combination no. : 0 402 648 823
Injection pump
Pump designation : PE8P120A520/SRS7115
EP type number : 0 412 628 813
Governor
Governor design. : RQV300...1150PA756
Governor no. : 0 421 813 486

Customer-spec. information
Customer : MWM

Engine : TBD234V8

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
: (5.15...5.35)
Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 8- 5- 4- 7- 2-
3- 6

SD ang. spacing°CS: 0-30-90-120-180-210-
270-300
Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 800
Contr.-rod trav.mm: 14.90...15.00
Del.quantity cm3/ : 26.0...26.2
100H.: (25.7...26.5)
Dispersion cm3/ : 0.5
100H.: (0.9)

2nd speed 1/min: 300
Contr.-rod trav. m: 6.20...6.40
Del.quantity cm3/ : 3.0...4.0
100H.: (-)
Dispersion cm3/ : 0.6
100H.: (1.0)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300
Sleeve travel mm: 1.30...1.40
2nd speed 1/min: 350
Sleeve travel mm: 1.60...2.00
3rd speed 1/min: 560
Sleeve travel mm: 2.50...2.90
4th speed 1/min: 1190
Sleeve travel mm: 8.30...8.40
5th speed 1/min: 1280
Sleeve travel mm: 9.50...9.90

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1200
Contr.-rod travelmm: 15.20...17.80

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 52...60

Testing:
1st c-rod trav.mm : 13.90
Speed 1/min : 1190...1200
2nd c-rod trav.mm : 4.00

Speed 1/min : 1270...1300
4th speed 1/min : 1400
C-rod trav.mm : 0.00...1.00

APPLICATION
Installation 2300

LOWEST RATED SPEED I

Control-lever
position degrees: 14...22

Testing:

Speed 1/min : 100
C-rod trav.mm min : 8.00
Speed 1/min : 300
C-rod trav.mm : 6.50...6.70

CONSTANT REGULATION

Speed 1/min : 300...580

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500
Pressure hPa : 900
Contr.-rod trav.mm: 14.90...15.00

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 9.30...9.50
2nd pressure hPa : 625
C-rod trav.mm : 14.70...14.80
3rd pressure hPa : 250
C-rod trav.mm : 11.30...11.50

SWITCH-OVER POINT

Speed 1/min : 220 (240)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 13.90
Speed 1/min : 1190...1200

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 200.0...240.0
1000H.: (196.0...244.0)

Remarks:

Full-load delivery not known. Set
according to engine test report.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,7 B
Edition : 14.11.86
Superceeded : 2.86
Calibrating oil : ISO-4113

Combination no. : 0 402 648 824

Injection pump
Pump designation : PE8P120A32OLS7801
EP type number : 0 412 628 806
Governor
Governor design. : RQV300..10SOPA797
Governor no. : 0 421 813 532

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM442 LA

1st version kW : 320.0
Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
Contr.-rod trav.mm: 20.00...21.00
Cam sequence : 8- 7- 2- 6- 3- 5-
 4- 1

SD ang. spacing°CS: 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 600

Contr.-rod trav.mm: 14.80...15.00

Del.quantity cm3/ : 21.6...21.8

100H.: (21.3...22.1)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 300

Contr.-rod trav. m: 6.20...6.60

Del.quantity cm3/ : 1.6...2.2

100H.: (1.3...2.5)

Dispersion cm3/ : 0.6

100H.: (1.0)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 1.20...1.40

2nd speed 1/min: 600

Sleeve travel mm: 4.90...5.10

3rd speed 1/min: 1075

Sleeve travel mm: 7.40...7.60

4th speed 1/min: 1100

Sleeve travel mm: 8.00...8.20

5th speed 1/min: 1150

Sleeve travel mm: 9.00...9.20

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1090

Contr.-rod travelmm: 16.50...18.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 600
Charge press. hPa : 680
Del.quantity cm3/ : 216.0...218.0
1000H.: (213.0...221.0)
Dispersion cm3/ : 5.00
1000H.: (9.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 50...58

Testing:

1st c-rod trav.mm : 14.70
Speed 1/min : 1095...1110
2nd c-rod trav.mm : 4.00
Speed 1/min : 1160...1190
4th speed 1/min : 1300
C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Control-lever
position degrees: 15...23

Testing:

Speed 1/min : 100
C-rod trav.mm min : 7.90
Speed 1/min : 300
C-rod trav.mm : 6.20...6.40

CONSTANT REGULATION

Speed 1/min : 300...500

TORQUE CONTROL

Dimension a mm : 0.40
2nd speed 1/min : 1050
C-rod trav.mm : 15.60...16.00
3rd speed 1/min : 850
C-rod trav.mm : 16.00...16.20

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 600
Pressure hPa : 680
Contr.-rod trav.mm: 14.80...25.00

Measurement

Speed 1/min : 600

1st pressure hPa : 310
C-rod trav.mm : 12.20...12.40
2nd pressure hPa : 470
C-rod trav.mm : 13.80...14.00
3rd pressure hPa : 820
C-rod trav.mm : 15.00...15.10

4th pressure hPa : 1100
C-rod trav.mm : 16.00...16.10
5th pressure hPa : 150
C-rod trav.mm : 11.50...11.70

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 1150
Speed 1/min : 1050
Del.quantity cm3/ : 232.0...235.0
1000H.: (229.0...238.0)
Dispersion cm3/ : 8.0
1000H.: (12.0)
Charge press. hPa : 1150
Speed 1/min : 850
Del.quantity cm3/ : 247.0...251.0
1000H.: (244.0...254.0)
Dispersion cm3/ : 8.0
1000H.: (12.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 14.70
Speed 1/min : 1095...1110

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 200.0...220.0
1000H.: (196.0...224.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,7 AS
Edition : 14.08.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 402 648 825

Injection pump
Pump designation : PE8P120A320LS7801
EP type number : 0 412 628 806
Governor
Governor design. : RQV300..1050PA797-3
Governor no. : 0 421 813 627

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM442 A

1st version kW : 260.0
Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
Contr.-rod trav.mm: 20.00...21.00
Cam sequence : 8- 7- 2- 6- 3- 5-
 4- 1

SD ang. spacing⁰CS: 0-45-90-135-180-225-

270-315
Tolerance + - ⁰ : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 600

Contr.-rod trav.mm: 13.90...14.00

Del.quantity cm3/ : 19.6...19.8

100H.: (19.3...20.1)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 6.2...6.6

Del.quantity cm3/ : 1.6...2.2

100H.: (1.3...2.5)

Dispersion cm3/ : 0.6

100H.: (1.0)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 1.20...1.40

2nd speed 1/min: 600

Sleeve travel mm: 4.90...5.10

3rd speed 1/min: 1075

Sleeve travel mm: 7.40...7.60

4th speed 1/min: 1100

Sleeve travel mm: 8.00...8.20

5th speed 1/min: 1150

Sleeve travel mm: 9.00...9.20

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1090

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

C02

1st version

Speed 1/min: 600

Charge press. hPa : 650

Del.quantity cm3/ : 196.0...198.0

1000H.: (193.0...201.0)

Dispersion cm3/ : 5.00

1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 115...122

Testing:

1st c-rod trav.mm : 11.80

Speed 1/min : 1090...1100

2nd c-rod trav.mm : 4.00

Speed 1/min : 1170...1200

4th speed 1/min : 1300

C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Control-lever

position degrees: 80...88

Testing:

Speed 1/min : 100

C-rod trav.mm min : 7.70

Speed 1/min : 300

C-rod trav.mm : 6.20...6.40

CONSTANT REGULATION

Speed 1/min : 300...450

TORQUE CONTROL

Dimension a mm : 1.40

2nd speed 1/min : 1050

C-rod trav.mm : 12.60...12.80

3rd speed 1/min : 850

C-rod trav.mm : 13.70...13.90

4th speed 1/min : 700

C-rod trav.mm : 14.20...14.40

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 600

Pressure hPa : 650

Contr.-rod trav.mm: 13.90...14.00

Measurement

Speed 1/min : 600

1st pressure hPa : 300

C-rod trav.mm : 12.20...12.40

2nd pressure hPa : 400

C-rod trav.mm : 13.20...13.50

3rd pressure hPa : 850
C-rod trav.mm : 14.00...14.10
4th pressure hPa : -
C-rod trav.mm : 11.50...11.60

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 1050
Speed 1/min : 1050
Del.quantity cm3/ : 175.0...179.0
1000H.: (172.0...182.0)

Dispersion cm3/ : 8.0
1000H.: (12.0)

Charge press. hPa : 1050
Speed 1/min : 700
Del.quantity cm3/ : 209.0...213.0
1000H.: (206.0...216.0)

Dispersion cm3/ : 8.0
1000H.: (12.0)

Charge press. hPa : 1050
Speed 1/min : 850
Del.quantity cm3/ : 203.0...207.0
1000H.: (200.0...210.0)

Dispersion cm3/ : 8.0
1000H.: (12.0)

Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : ?

1000H.: ?
Dispersion cm3/ : 8.0
1000H.: (12.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 11.80
Speed 1/min : 1090...1100

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 175.0...190.0
1000H.: (171.0...194.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 14,0 H
Edition : 09.03.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 402 648 826

Injection pump
Pump designation : PE8P120A920/4LS7125S
EP type number : 0 412 628 815
Governor
Governor design. : RQV200...950PA736-1
Governor no. : 0 421 813 551

Customer-spec. information
Customer : SAAB-SCANIA

Engine : DSC14 05

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.8

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.00...5.10
: (4.95...5.15)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 2- 7- 3- 4- 5-
 6- 8

SD ang. spacing⁰CS: 0-45-90-135-180-225-
 270-315

Tolerance + - ⁰ : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 13.30...13.40

Del.quantity cm3/ : 20.9...21.1

100H.: (20.6...21.4)

Dispersion cm3/ : 0.6

100H.: (0.9)

2nd speed 1/min: 225

Contr.-rod trav. m: 5.10...5.30

Del.quantity cm3/ : 1.6...2.0

100H.: (-)

Dispersion cm3/ : 0.3

100H.: (0.6)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 225

Sleeve travel mm: 1.30...1.40

2nd speed 1/min: 330

Sleeve travel mm: 2.40...2.70

3rd speed 1/min: 420

Sleeve travel mm: 3.10...3.40

4th speed 1/min: 1000

Sleeve travel mm: 7.90...8.10

5th speed 1/min: 1120

Sleeve travel mm: 9.40...9.60

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1040

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Charge press. hPa : 900

Del.quantity cm3/ : 209.0...211.0

1000H.: (206.0...214.0)

Dispersion cm3/ : 6.00
1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 54...62

Testing:

1st c-rod trav.mm : 12.30

Speed 1/min : 990...1000

2nd c-rod trav.mm : 4.00

Speed 1/min : 1100...1130

4th speed 1/min : 1250

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 6...14

Testing:

Speed 1/min : 100

C-rod trav.mm min : 6.40

Speed 1/min : 225

C-rod trav.mm : 4.90...5.10

C-rod trav.mm : 2.00

Speed 1/min : 340...400

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 900

Contr.-rod trav.mm: 13.30...13.40

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 11.30...11.40

2nd pressure hPa : 365

C-rod trav.mm : 12.80...12.90

3rd pressure hPa : 215

C-rod trav.mm : 11.90...12.10

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 900

Speed 1/min : 950

Del.quantity cm3/ : 199.0...207.0

1000H.: (197.0...209.0)

Charge press. hPa : -

Speed 1/min : 500

Del.quantity cm3/ : 158.0...162.0

1000H.: (156.0...164.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 12.30
Speed 1/min : 990...1000

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 240.0...290.0
1000H.: (-)
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 225
Contr.-rod trav.mm: 4.90...5.10

Remarks:

Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm
Because of flattening, set the spring
preload on new delivery-valve holders
to 2.9...3.1 mm.

ADDITIONAL INFORMATION

Check and set without R0B0 diaphragm

For comb. with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

Test specifications approved by Scania
on 1986-09-16
Start of delivery - engine: 16° before
TDC
Engine firing sequence: 1-5-4-2-6-3-7-8

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 4,2 B3
 Edition : 09.03.87
 Superceeded : 9.86
 Calibrating oil : ISO-4113
 Combination no. : 0 402 648 828
 Injection pump
 Pump designation : PE8P120A920/4LS7003
 EP type number : 0 412 628 801
 Governor
 Governor design. : RQ1020PA528-3
 Governor no. : 0 421 801 348

Customer-spec. information
 Customer : SAAB-SCANIA

Engine : DSI4 44 DSI14 45

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0.8

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.00...5.10
 : (4.95...5.15)
 Contr.-rod trav.mm: 9.00...12.00

C07

Cam sequence : 1- 2- 7- 3- 4- 5-
 6- 8

SD ang. spacing°CS: 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 970

 Contr.-rod trav.mm: 12.80...12.90

 Del.quantity cm3/ : 19.9...20.1

 100H.: (19.6...20.4)

 Dispersion cm3/ : 0.6

 100H.: (0.9)

SLEEVE POSITION

Control-lever position
 Degree: 45...47
 Speed 1/min: 600
 Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 970
 Del.quantity cm3/ : 199.0...201.0
 1000H.: (196.0...204.0)
 Dispersion cm3/ : 6.00
 1000H.: (9.00)

HIGHEST RATED SPEED

1st version
 Control-lever
 position degrees: 20...28

Setting point:
 Speed 1/min : 600
 Contr.-rod trav.mm: 16.5

Testing:

1st c-rod trav.mm : 11.80
 Speed 1/min : 1020...1025
 2nd c-rod trav.mm : 4.00
 Speed 1/min : 1066...1081
 4th speed 1/min : 1120
 C-rod trav.mm : 0.00...1.00

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 11.80
Speed 1/min : 1020...1025

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 240.0...290.0
1000H.: (-)
Contr.-rod trav.mm: 20.00...21.00

HIGH IDLE

Contr.-rod trav.mm: 4.90...5.10
Dispersion cm3/ : 4.00
1000H.: (7.00)

Remarks:

ADDITIONAL INFORMATION

Check and set without ROBO diaphragm

For comb. with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

Test specifications approved by Scania
on 1986-06-04

Start of delivery - engine:

DS 14 - 18° before TDC

DSI 14 - 17° before TDC

Engine firing sequence: 1-5-4-2-6-3-7-8

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MWM 28,8 A2
Edition : 02.06.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 402 648 829
Injection pump
Pump designation : PE8P120A520/SRS7109
EP type number : 0 412 628 809
Governor
Governor design. : RQV300...1150PA756-2
Governor no. : 0 421 813 597

Customer-spec. information
Customer : MWM

Engine : TBD234V16

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42
Overflow valve
: 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
: (5.15...5.35)
Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 2- 3- 4- 7- 8-
5- 6

SD ang. spacing°CS: 0-30-90-120-225-255-
315-345
Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 800
Contr.-rod trav.mm: 14.90...15.00
Del.quantity cm3/ : 26.0...26.2
100H.: (25.7...26.5)
Dispersion cm3/ : 0.5
100H.: (0.9)
2nd speed 1/min: 300.0
Contr.-rod trav. m: 6.5...6.7
Del.quantity cm3/ : 3.2...3.8
100H.: (2.9...4.1)
Dispersion cm3/ : 0.6
100H.: (1.0)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300
Sleeve travel mm: 1.30...1.40
2nd speed 1/min: 360
Sleeve travel mm: 1.60...2.10
3rd speed 1/min: 560
Sleeve travel mm: 2.50...2.90
4th speed 1/min: 1190
Sleeve travel mm: 8.30...8.40
5th speed 1/min: 1280
Sleeve travel mm: 9.60...9.90

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1200
Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 800
Charge press. hPa : 900
Del.quantity cm3/ : 260.0...262.0
1000H.: (257.0...265.0)
Dispersion cm3/ : 5.00
1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 52...60

Testing:

1st c-rod trav.mm : 13.90

Speed 1/min : 1190...1200

2nd c-rod trav.mm : 4.00

Speed 1/min : 1285...1315

4th speed 1/min : 1400

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 14...22

Testing:

Speed 1/min : 100

C-rod trav.mm min : 8.00

Speed 1/min : 300

C-rod trav.mm : 6.50...6.70

CONSTANT REGULATION

Speed 1/min : 300...580

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 900

Contr.-rod trav.mm: 14.90...15.00

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 9.30...9.50

2nd pressure hPa : 625

C-rod trav.mm : 14.70...14.80

3rd pressure hPa : 250

C-rod trav.mm : 11.30...11.50

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 900

Speed 1/min : 1150

Del.quantity cm3/ : 257.0...263.0

1000H.: (254.0...266.0)

Charge press. hPa : -

Speed 1/min : 500

C10

Del.quantity cm3/ : 128.0...132.0
1000H.: (126.0...134.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 13.90

Speed 1/min : 1190...1200

LOW IDLE

Speed 1/min : 300

Contr.-rod trav.mm: 6.50...6.70

Del.quantity cm3/ : 32.0...38.0

1000H.: (29.0...41.0)

Dispersion cm3/ : 6.00

1000H.: (10.00)

Remarks:

Pump runs in tandem

Full-load delivery not known. Set
according to engine test report.

APPLICATION

Ship

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,7 E
Edition : 09.03.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 402 648 831

Injection pump
Pump designation : PE8P120A32OLS7801-1
EP type number : 0 412 628 818
Governor
Governor design. : RQV350..1050PA842-3
Governor no. : 0 421 813 622

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM442 LA

1st version kW : 320.0
Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
Contr.-rod trav.mm: 20.00...21.00
Cam sequence : 8- 7- 2- 6- 3- 5-
 4- 1

SD ang. spacing°CS: 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 600

Contr.-rod trav.mm: 14.50...14.70

Del.quantity cm3/ : 21.2...21.4

100H.: (20.9...21.7)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 350

Contr.-rod trav. m: 5.70...5.90

Del.quantity cm3/ : 1.6...2.2

100H.: (1.3...2.5)

Dispersion cm3/ : 0.6

100H.: (1.0)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 350

Sleeve travel mm: 1.90...2.10

2nd speed 1/min: 700

Sleeve travel mm: 4.00...4.40

3rd speed 1/min: 1100

Sleeve travel mm: 6.80...7.20

4th speed 1/min: 1200

Sleeve travel mm: 8.30...8.70

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1150

Contr.-rod travelmm: 16.50...18.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 600
Charge press. hPa : 750
Del. quantity cm3/ : 212.0...214.0
1000H.: (209.0...217.0)
Dispersion cm3/ : 5.00
1000H.: (9.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 58...66

Testing:
1st c-rod trav.mm : 14.20
Speed 1/min : 1090...1100
2nd c-rod trav.mm : 4.00
Speed 1/min : 1175...1205
4th speed 1/min : 1300
C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Control-lever
position degrees: 10...18

Testing:
Speed 1/min : 100
C-rod trav.mm min : 7.40
Speed 1/min : 350
C-rod trav.mm : 5.70...5.90

CONSTANT REGULATION

Speed 1/min : 350...550

TORQUE CONTROL

2nd speed 1/min : 1050
C-rod trav.mm : 15.20...15.40
3rd speed 1/min : 975
C-rod trav.mm : 15.40...15.60

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 600
Pressure hPa : 750
Contr.-rod trav.mm: 14.50...14.70

Measurement

Speed 1/min : 600

1st pressure hPa : 400
C-rod trav.mm : 12.20...12.40
2nd pressure hPa : 550
C-rod trav.mm : 13.60...13.80
3rd pressure hPa : 900
C-rod trav.mm : 14.70...14.80
4th pressure hPa : 1250
C-rod trav.mm : 15.50...15.70
5th pressure hPa : 150

C-rod trav.mm : 11.20...11.40

SWITCH-OVER POINT

Speed 1/min : 270 (290)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 1250
Speed 1/min : 1050
Del. quantity cm3/ : 227.0...230.0
1000H.: (224.0...233.0)
Dispersion cm3/ : 8.0
1000H.: (12.0)
Charge press. hPa : 1250
Speed 1/min : 900
Del. quantity cm3/ : 238.0...242.0
1000H.: (235.0...245.0)
Dispersion cm3/ : 8.0
1000H.: (12.0)
Charge press. hPa : 1250
Speed 1/min : 1050
Del. quantity cm3/ : 156.0...159.0
1000H.: (153.0...162.0)
Dispersion cm3/ : 8.0
1000H.: (12.0)
Charge press. hPa : -
Speed 1/min : 500
Del. quantity cm3/ : 150.0...152.0
1000H.: (147.0...155.0)
Dispersion cm3/ : 8.0
1000H.: (12.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 14.20
Speed 1/min : 1090...1100

STARTING FUEL DELIVERY

Speed 1/min : 100
Del. quantity cm3/ : 240.0...260.0
1000H.: (236.0...264.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,7 A 6
Edition : 15.05.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 402 648 833

Injection pump
Pump designation : PE8P120A320LS7801-1
EP type number : 0 412 628 818
Governor
Governor design. : RQV300..10SOPA866
Governor no. : 0 421 813 628

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM442 A

1st version kW : 260.0
Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
 Contr.-rod trav.mm: 20.00...21.00
 Cam sequence : 8- 7- 2- 6- 3- 5-
 4- 1

SD ang. spacing^oCS: 0-45-90-135-180-225-

270-315

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 1050

Contr.-rod trav.mm: 12.80...12.90

Del.quantity cm3/ : 18.1...18.3

1000H.: (17.8...18.6)

Dispersion cm3/ : 0.5

1000H.: (0.9)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 5.6...6.0

Del.quantity cm3/ : 1.6...2.2

1000H.: (1.3...2.5)

Dispersion cm3/ : 0.6

1000H.: (1.0)

(B) Setting of injection pump with
 externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 1.20...1.40

2nd speed 1/min: 600

Sleeve travel mm: 4.90...5.10

3rd speed 1/min: 1100

Sleeve travel mm: 8.00...8.50

4th speed 1/min: 1170

Sleeve travel mm: 9.20...9.80

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1090

Contr.-rod travelmm: 16.50...18.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1050
 Charge press. hPa : 1100
 Del.quantity cm3/ : 181.0...183.0
 1000H.: (178.0...186.0)
 Dispersion cm3/ : 5.00
 1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 59...67

Testing:

1st c-rod trav.mm : 11.80

Speed 1/min : 1090...1100

2nd c-rod trav.mm : 4.00

Speed 1/min : 1160...1190

4th speed 1/min : 1300

C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Control-lever

position degrees: 10...18

Testing:

Speed 1/min : 200

C-rod trav.mm min : 7.30

Speed 1/min : 350

C-rod trav.mm : 5.60...5.80

CONSTANT REGULATION

Speed 1/min : 300...500

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1050

C-rod trav.mm : 12.80...12.90

2nd speed 1/min : 750

C-rod trav.mm : 14.40...14.60

3rd speed 1/min : 950

C-rod trav.mm : 13.50...13.60

4th speed 1/min : 830

C-rod trav.mm : 14.30...14.50

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 600

Pressure hPa : -

Contr.-rod trav.mm: 11.20...11.50

Measurement

Speed 1/min : 600

1st pressure hPa : 420

C-rod trav.mm : 11.90...12.10

2nd pressure hPa : 600

C-rod trav.mm : 13.60...13.80

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 1100

Speed 1/min : 700

Del. quantity cm³/ : 213.0...217.0

1000H.: (210.0...220.0)

Dispersion cm³/ : 8.00

1000H.: (12.0)

Charge press. hPa : 1100

Speed 1/min : 1050

Del. quantity cm³/ : 152.0...154.0*

1000H.: (149.0...157.0)

Dispersion cm³/ : 8.00

1000H.: (12.0)

Charge press. hPa : -

Speed 1/min : 500

Del. quantity cm³/ : 143.0...145.0

1000H.: (140.0...148.0)

Dispersion cm³/ : 8.00

1000H.: (12.0)

ROTATIONAL-SPEED LIMITATION

1st version

Imm control-rod travel less than

full-load trav. mm: 11.80

Speed 1/min : 1090...1100

STARTING FUEL DELIVERY

Speed 1/min : 100

Del. quantity cm³/ : 180.0...200.0

1000H.: (176.0...204.0)

Remarks:

* = Set at reduced-delivery stop.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,7 A7
Edition : 26.06.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 402 648 834

Injection pump
Pump designation : PE8P120A320LS7801-1
EP type number : 0 412 628 818
Governor
Governor design. : RQV350...900PA866-1
Governor no. : 0 421 813 629

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM442 A

1st version kW : 267.0
Speed 1/min: 1800

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
Contr.-rod trav.mm: 20.00...21.00
Cam sequence : 8- 7- 2- 6- 3- 5-
 4- 1

SD ang. spacing°CS: 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 880

Contr.-rod trav.mm: 13.80...13.90

Del.quantity cm3/ : 20.3...20.5

100H.: (20.0...20.8)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 6.2...6.6

Del.quantity cm3/ : 1.6...2.2

100H.: (1.3...2.5)

Dispersion cm3/ : 0.6

100H.: (1.0)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 1.20...1.40

2nd speed 1/min: 425

Sleeve travel mm: 2.40...2.60

3rd speed 1/min: 550

Sleeve travel mm: 3.30...3.70

4th speed 1/min: 900

Sleeve travel mm: 8.20...8.60

5th speed 1/min: 975

Sleeve travel mm: 9.70...10.30

SLEEVE POSITION

Control-lever position

Degree: -1

Contr.-rod travelmm: 16.50...18.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 880
Charge press. hPa : 900
Del. quantity cm3/ : 203.0...205.0
1000H.: (200.0...208.0)
Dispersion cm3/ : 5.00
1000H.: (9.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 116...124

Testing:

1st c-rod trav.mm : 12.80
Speed 1/min : 920...930
2nd c-rod trav.mm : 4.00
Speed 1/min : 990...1020
4th speed 1/min : 1300
C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Control-lever
position degrees: 64...72

Testing:

Speed 1/min : 100
C-rod trav.mm min : 7.90
Speed 1/min : 350
C-rod trav.mm : 6.20...6.40

CONSTANT REGULATION

Speed 1/min : 300...500

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 880
C-rod trav.mm : 13.80...13.90
2nd speed 1/min : 750
C-rod trav.mm : 14.40...14.60
3rd speed 1/min : 825
C-rod trav.mm : 14.00...14.20

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 600
Pressure hPa : -
Contr.-rod trav.mm: -

Measurement

Speed 1/min : 600

1st pressure hPa : 350
C-rod trav.mm : 1.00...1.20
2nd pressure hPa : 550
C-rod trav.mm : 2.60...2.80

SWITCH-OVER POINT

Speed 1/min : 270 (290)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 900
Speed 1/min : 700
Del. quantity cm3/ : 212.0...216.0
1000H.: (209.0...219.0)
Dispersion cm3/ : 8.0
1000H.: (12.0)
Charge press. hPa : -
Speed 1/min : 500
Del. quantity cm3/ : 143.0...145.0
1000H.: (140.0...148.0)
Dispersion cm3/ : 8.0
1000H.: (12.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 12.80
Speed 1/min : 920...930

STARTING FUEL DELIVERY

Speed 1/min : 100
Del. quantity cm3/ : 180.0...200.0
1000H.: (176.0...204.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,7 A8
Edition : 21.08.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 402 648 841

Injection pump
Pump designation : PE8P120A320LS7801-1
EP type number : 0 412 628 818
Governor
Governor design. : RQ300/1050PA762-S
Governor no. : 0 421 801 399

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM442 A

1st version kW : 260.0
Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
Contr.-rod trav.mm: 20.00...21.00
Cam sequence : 8- 7- 2- 6- 3- 5-
 4- 1

SD ang. spacing^oCS: 0-45-90-135-180-225-
 270-315
Tolerance + - ^o : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 600

Contr.-rod trav.mm: 13.80...14.00

Del.quantity cm3/ : 19.6...19.8

 100H.: (19.3...20.1)

Dispersion cm3/ : 0.5

 100H.: (0.9)

2nd speed 1/min: 300.0
Contr.-rod trav. m: 6.2...6.6
Del.quantity cm3/ : 1.6...2.2
 100H.: (1.3...2.5)
Dispersion cm3/ : 0.6
 100H.: (1.0)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300
Sleeve travel mm: 2.20...2.40
2nd speed 1/min: 600
Sleeve travel mm: 5.90...6.10
3rd speed 1/min: 870
Sleeve travel mm: 6.10...6.30
4th speed 1/min: 1050
Sleeve travel mm: 6.70...6.90
5th speed 1/min: 1170
Sleeve travel mm: 9.20...9.80

SLEEVE POSITION

Control-lever position
Degree: 108...110
Speed 1/min: 600
Contr.-rod travelmm: 19.20...20.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

C19

1st version

Speed 1/min: 600
Charge press. hPa : 650
Del.quantity cm3/ : 196.0...198.0
 1000H.: (193.0...201.0)
Dispersion cm3/ : 5.00
 1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Control-lever
position degrees: 32...40

Setting point:

Speed 1/min : 600
Contr.-rod trav.mm: 20.0

Testing:

1st c-rod trav.mm : 11.80
Speed 1/min : 1095...1110
2nd c-rod trav.mm : 4.00
Speed 1/min : 1170...1200
4th speed 1/min : 1300
C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Control-lever
position degrees: 10...18
Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 6.3

Testing:

Speed 1/min : 200
C-rod trav.mm min : 8.00
Speed 1/min : 300
C-rod trav.mm : 6.30
C-rod trav.mm : 2.00
Speed 1/min : 380...420

TORQUE CONTROL

Dimension a mm : 0.75
2nd speed 1/min : 1050
C-rod trav.mm : 12.80...13.00
3rd speed 1/min : 850
C-rod trav.mm : 13.90...14.10
4th speed 1/min : 700
C-rod trav.mm : 14.20...14.50

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 600
Pressure hPa : 650
Contr.-rod trav.mm: 13.80...14.00

Measurement

Speed 1/min : 600

1st pressure hPa : 300
C-rod trav.mm : 12.10...12.30
2nd pressure hPa : 400
C-rod trav.mm : 13.10...13.40
3rd pressure hPa : 850
C-rod trav.mm : 13.90...14.00

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 1050
Speed 1/min : 1050
Del.quantity cm3/ : 178.0...181.0
1000H.: (175.0...184.0)

Dispersion cm3/ : 8.0
1000H.: (12.0)

Charge press. hPa : 1050
Speed 1/min : 700
Del.quantity cm3/ : 209.0...213.0
1000H.: (206.0...216.0)

Dispersion cm3/ : 8.0
1000H.: (12.0)

Charge press. hPa : 1050
Speed 1/min : 850
Del.quantity cm3/ : 206.0...210.0
1000H.: (203.0...213.0)

Dispersion cm3/ : 8.0
1000H.: (12.0)

Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 145.0...147.0
1000H.: (142.0...150.0)

Dispersion cm3/ : 8.0
1000H.: (12.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 11.80
Speed 1/min : 1095...1110

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 175.0...190.0
1000H.: (171.0...194.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 18,3 L
Edition : 09.03.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 402 649 800

Injection pump
Pump designation : PE10P120A320LS7809
EP type number : 0 412 629 800
Governor
Governor design. : RQ300/1050PA856
Governor no. : 0 421 801 386

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM443 LA

1st version kW : 401.0
Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 130...150

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Contr.-rod trav.mm: 20.00...21.00
 Cam sequence : 10- 9- 4- 1- 8- 7
 - 6- 3- 5- 2

SD ang. spacing⁰CS: 0-45-72-117-144-189-

216-261-288-333

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 10

BASIC SETTING

1st speed 1/mi: 600

Contr.-rod trav.mm: 14.70...14.90

Del.quantity cm3/ : 21.9...22.1

100H.: (21.6...22.4)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 6.6...6.8

Del.quantity cm3/ : 1.6...2.2

100H.: (1.3...2.5)

Dispersion cm3/ : 0.6

100H.: (1.0)

SLEEVE POSITION

Control-lever position

Degree: 108...110

Speed 1/min: 600

Contr.-rod travelmm: 19.20...20.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 600

Charge press. hPa : 900

Del.quantity cm3/ : 219.0...221.0

1000H.: (216.0...224.0)

Dispersion cm3/ : 5.00

1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 36...44

Setting point:

Speed 1/min : 600
 Contr.-rod trav.mm: 20.0

Testing:

1st c-rod trav.mm : 14.10

Speed 1/min : 1095...1110

2nd c-rod trav.mm : 4.00

Speed 1/min : 1150...1180

4th speed 1/min : 1300

C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Control-lever

position degrees: 9...17

Setting point w/out aux. spring

Speed 1/min : 300

Contr.-rod trav.mm: 6.7

Testing:

Speed 1/min : 100

C-rod trav.mm min : 8.30

Speed 1/min : 300

C-rod trav.mm : 6.70

C-rod trav.mm : 2.00

Speed 1/min : 380...420

TORQUE CONTROL

2nd speed 1/min : 1050

C-rod trav.mm : 15.10...15.30

3rd speed 1/min : 800

C-rod trav.mm : 15.50...15.70

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 600

Pressure hPa : 900

Contr.-rod trav.mm: 14.70...14.90

Measurement

Speed 1/min : 600

1st pressure hPa : 400

C-rod trav.mm : 12.10...12.30

2nd pressure hPa : 600

C-rod trav.mm : 13.60...13.80

3rd pressure hPa : 960

C-rod trav.mm : 14.80...14.90

4th pressure hPa : 1100

C-rod trav.mm : 15.20...15.40

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 1300

Speed 1/min : 1050

Del. quantity cm3/ : 229.0...232.0
1000H.: (226.0...235.0)

Dispersion cm3/ : 8.0

1000H.: (12.0)

Charge press. hPa : 1300

Speed 1/min : 800

Del. quantity cm3/ : 234.0...238.0
1000H.: (231.0...241.0)

Dispersion cm3/ : 8.0

1000H.: (12.0)

Charge press. hPa : -

Speed 1/min : 500

Del. quantity cm3/ : 133.0...135.0
1000H.: (130.0...138.0)

Dispersion cm3/ : 8.0

1000H.: (-)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 14.10

Speed 1/min : 1095...1110

STARTING FUEL DELIVERY

Speed 1/min : 100

Del. quantity cm3/ : 230.0...250.0
1000H.: (226.0...254.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 18,3 L1
Edition : 27.03.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 402 649 801

Injection pump
Pump designation : PE10P120A32OLS7809-1
EP type number : 0 412 629 801
Governor
Governor design. : RQ300/1050PA717-1
Governor no. : 0 421 801 396

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM443 LA

1st version kW : 401.0
Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 130...150

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Contr.-rod trav.mm: 20.00...21.00
Cam sequence : 10- 9- 4- 1- 8- 7
 - 6- 3- 5- 2

SD ang. spacing^oCS: 0-45-72-117-144-189-
 216-261-288-333
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 10

BASIC SETTING

1st speed 1/mi: 600

Contr.-rod trav.mm: 14.70...14.90

Del.quantity cm3/ : 21.9...22.1

 100H.: (21.6...22.4)

Dispersion cm3/ : 0.5

 100H.: (0.9)

2nd speed 1/min: 300.0
Contr.-rod trav. m: 6.6...6.8
Del.quantity cm3/ : 1.6...2.2
 100H.: (1.3...2.5)
Dispersion cm3/ : 0.6
 100H.: (1.0)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300
Sleeve travel mm: 2.80...3.00
2nd speed 1/min: 600
Sleeve travel mm: 6.00...6.20
3rd speed 1/min: 900
Sleeve travel mm: 6.10...6.30
4th speed 1/min: 1000
Sleeve travel mm: 6.30...6.40
5th speed 1/min: 1150
Sleeve travel mm: 9.30...9.70

SLEEVE POSITION

Control-lever position
Degree: 108...110
Speed 1/min: 600
Contr.-rod travelmm: 19.20...20.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

G25

1st version

Speed 1/min: 600
Charge press. hPa : 900
Del.quantity cm3/ : 219.0...221.0
 1000H.: (216.0...224.0)
Dispersion cm3/ : 5.00
 1000H.: (9.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 36...44

Setting point:

Speed 1/min : 600
Contr.-rod trav.mm: 20.0

Testing:

1st c-rod trav.mm : 14.10
Speed 1/min : 1095...1110
2nd c-rod trav.mm : 4.00
Speed 1/min : 1150...1180
4th speed 1/min : 1300
C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Control-lever
position degrees: 9...17
Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 6.7

Testing:

Speed 1/min : 100
C-rod trav.mm min : 8.30
Speed 1/min : 300
C-rod trav.mm : 6.70
C-rod trav.mm : 2.00
Speed 1/min : 380...420

TORQUE CONTROL

2nd speed 1/min : 1050
C-rod trav.mm : 15.10...15.30
3rd speed 1/min : 800
C-rod trav.mm : 15.50...15.70

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 600
Pressure hPa : 900
Contr.-rod trav.mm: 14.70...14.90

Measurement

Speed 1/min : 600

1st pressure hPa : 400

C-rod trav.mm : 12.10...12.30
2nd pressure hPa : 600
C-rod trav.mm : 13.60...13.80
3rd pressure hPa : 960
C-rod trav.mm : 14.80...14.90
4th pressure hPa : 1100
C-rod trav.mm : 15.20...15.40

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 1300
Speed 1/min : 1050
Del.quantity cm3/ : 229.0...232.0
1000H.: (226.0...235.0)

Dispersion cm3/ : 8.0
1000H.: (12.0)

Charge press. hPa : 1300
Speed 1/min : 800
Del.quantity cm3/ : 234.0...238.0
1000H.: (231.0...241.0)

Dispersion cm3/ : 8.0
1000H.: (12.0)

Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 133.0...135.0
1000H.: (130.0...138.0)

Dispersion cm3/ : 8.0
1000H.: (-)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 14.10
Speed 1/min : 1095...1110

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 230.0...250.0
1000H.: (226.0...254.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 18,3 M
Edition : 14.08.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 402 649 803

Injection pump
Pump designation : PE10P120A320LS7809-1
EP type number : 0 412 629 801
Governor
Governor design. : RQV300..1050PA797-4
Governor no. : 0 421 813 654

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM443 LA

1st version kW : 401.0
Speed 1/min: ≤ 100

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 130...150

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Contr.-rod trav.mm: 20.00...21.00
Cam sequence : 10-9-4-1-8-7-6-3-5-2

SD ang. spacing^oCS: 0-45-72-117-144-189-
 216-261-288-333
Tolerance + - ^o : 0.50 (0.75)

SD mark cyl. no. : 10

BASIC SETTING

1st speed 1/mi: 600

Contr.-rod trav.mm: 14.70...14.90

Del.quantity cm3/ : 21.9...22.1

 100H.: (21.6...22.4)

Dispersion cm3/ : 0.5

 100H.: (0.9)

2nd speed 1/min: 300.0
Contr.-rod trav. m: 6.6...6.8
Del.quantity cm3/ : 1.6...2.2
 100H.: (1.3...2.5)
Dispersion cm3/ : 0.6
 100H.: (1.0)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300
Sleeve travel mm: 1.20...1.40
2nd speed 1/min: 600
Sleeve travel mm: 4.90...5.10
3rd speed 1/min: 800
Sleeve travel mm: 5.80...6.10
4th speed 1/min: 1075
Sleeve travel mm: 7.40...7.70
5th speed 1/min: 1150
Sleeve travel mm: 8.00...8.80

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1100
Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 600
Charge press. hPa : 900
Del.quantity cm3/ : 219.0...221.0
 1000H.: (216.0...224.0)
Dispersion cm3/ : 5.00
 1000H.: (9.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 36...44

Testing:

1st c-rod trav.mm : 14.10
Speed 1/min: 1090...1100
2nd c-rod trav.mm : 4.00
Speed 1/min: 1155...1185
4th speed 1/min: 1300
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 9...17

Testing:

Speed 1/min : 200
C-rod trav.m min : 8.60
Speed 1/min : 300
C-rod trav.mm : 6.60...6.80

CONSTANT REGULATION

Speed 1/min : 300...400

TORQUE CONTROL

2nd speed 1/min : 1050
C-rod trav.mm : 15.10...15.30
3rd speed 1/min : 800
C-rod trav.mm : 15.50...15.70

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 600
Pressure hPa : 900
Contr.-rod trav.mm: 14.70...14.90

Measurement

Speed 1/min : 600

1st pressure hPa : 400
C-rod trav.mm : 12.10...12.30
2nd pressure hPa : 600
C-rod trav.mm : 13.60...13.80
3rd pressure hPa : 960
C-rod trav.mm : 14.80...14.90
4th pressure hPa : 1100
C-rod trav.mm : 15.20...15.40

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 1300

Speed 1/min : 1050

Del.quantity cm3/ : 229.0...232.0

1000H.: (226.0...235.0)

Dispersion cm3/ : 8.0

1000H.: (12.0)

Charge press. hPa : 1300

Speed 1/min : 800

Del.quantity cm3/ : 234.0...238.0

1000H.: (231.0...241.0)

Dispersion cm3/ : 8.0

1000H.: (12.0)

Charge press. hPa : -

Speed 1/min : 500

Del.quantity cm3/ : 133.0...135.0

1000H.: (130.0...138.0)

Dispersion cm3/ : 8.0

1000H.: (-)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 14.10

Speed 1/min : 1090...1100

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 230.0...250.0

1000H.: (226.0...254.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 21,9 Z
Edition : 09.03.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 402 670 800

Injection pump
Pump designation : PE12P120A320LS7805-1
EP type number : 0 412 620 804
Governor
Governor design. : RSV350...750POA82S
Governor no. : 0 421 833 221

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM 444 LA

1st version kW : 389.0
Speed 1/min: 1500

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 150...170

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...215

Perforated-plate
diameter mm : 0.8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values _____

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 12-1-5-9-8-3-4-11-10
 -2-6-7

SD ang. spacing⁰CS: 0-45-60-105-120-165-
180-225-240-285-300-
345

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 12

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 14.10...14.20

Del.quantity cm3/ : 21.0...21.2

100H.: (20.7...21.5)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 350

Contr.-rod trav. m: 5.40...5.60

Del.quantity cm3/ : 1.4...2.0

100H.: (1.1...2.3)

Dispersion cm3/ : 0.8

100H.: (1.2)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Contr.-rod travelmm: 0.30...1.40

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Del.quantity cm3/ : 210.0...212.0

1000H.: (207.0...215.0)

Dispersion cm3/ : 5.00

1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 21...29

Testing:

D03

1st c-rod trav.mm : 13.10

Speed 1/min : 750...755

2nd c-rod trav.mm : 4.00

Speed 1/min : 780...790

4th speed 1/min : 1000

C-rod trav.mm : 0.30...1.70

LOWEST RATED SPEED I

Control-lever

position degrees: 9...17

Setting point w/out aux. spring

Speed 1/min : 350

Contr.-rod trav.mm: 5.5

Testing:

Speed 1/min : 100

C-rod trav.mm min : 19.50

Speed 1/min : 350

C-rod trav.mm : 5.50

SET IDLE AUXILIARY SPRING

Contr.-rod trav.mm: 2.00

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 650

Del.quantity cm3/ : 207.0...213.0

1000H.: (204.0...216.0)

Dispersion cm3/ : 8.0

1000H.: (12.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 13.10

Speed 1/min : 750...755

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 210.0...230.0

1000H.: (206.0...234.0)

Remarks:

Start-of-delivery mark 11° cam angle
after start of delivery cyl. 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 21,9 Y
Edition : 09.03.87
Superceeded : 12.86
Calibrating oil : ISO-4113

Combination no. : 0 402 670 801

Injection pump
Pump designation : PE12P120A320LS7807
EP type number : 0 412 620 806
Governor
Governor design. : RSV350...750POA825-1
Governor no. : 0 421 833 248

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM 444 LA

1st version kW : 407.0
Speed 1/min: 1500

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 150...170

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 12-1-5-9-8-3-4-11-10
 -2-6-7

SD ang. spacing°CS: 0-45-60-105-120-165-
 180-225-240-285-300-
 345

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 12

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 15.80...15.90

Del.quantity cm3/ : 24.1...24.3

100H.: (23.8...24.6)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 350

Contr.-rod trav. m: 5.40...5.60

Del.quantity cm3/ : 1.4...2.0

100H.: (1.1...2.3)

Dispersion cm3/ : 0.8

100H.: (1.2)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Contr.-rod travelmm: 0.30...1.40

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Del.quantity cm3/ : 241.0...243.0

1000H.: (238.0...246.0)

Dispersion cm3/ : 5.00

1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 23...31

Testing:

1st c-rod trav.mm : 14.80
Speed 1/min : 750...755
2nd c-rod trav.mm : 4.00
Speed 1/min : 780...790
4th speed 1/min : 1000
C-rod trav.mm : 0.30...1.70

LOWEST RATED SPEED I

Control-lever
position degrees: 9...17
Setting point w/out aux. spring
Speed 1/min : 350
Contr.-rod trav.mm: 5.5

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.50
Speed 1/min : 350
C-rod trav.mm : 5.50

SET IDLE AUXILIARY SPRING

Contr.-rod trav.mm: 2.00

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 14.80
Speed 1/min : 750...755

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 240.0...260.0
1000H.: (236.0...264.0)

Remarks:

Start-of-delivery mark 11° cam angle
after start of delivery cyl. 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 21,9 Y1
Edition : 21.08.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 402 670 802

Injection pump
Pump designation : PE12P120A32OLS7807
EP type number : 0 412 620 806
Governor
Governor design. : RSV350...750POA825-2
Governor no. : 0 421 833 250

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM 444 A

1st version kW : 360.0
Speed 1/min: 1500

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 150...170

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 12-1-5-9-8-3-4-11-10
 -2-6-7

SD ang. spacing°CS: 0-45-60-105-120-165-
 180-225-240-285-300-
 345

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 12

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 14.10...14.20

Del.quantity cm3/ : 21.5...21.7
 100H.: (21.2...22.0)

Dispersion cm3/ : 0.5
 100H.: (0.9)

2nd speed 1/min: 350.0
Contr.-rod trav. m: 4.8...5.0
Del.quantity cm3/ : 1.4...2.0
 100H.: (1.1...2.3)
Dispersion cm3/ : 0.8
 100H.: (1.2)

SLEEVE POSITION

Control-lever position
Degree: -3
Speed 1/min: 800
Contr.-rod travelmm: 0.30...1.40

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 700
Del.quantity cm3/ : 215.0...217.0
 1000H.: (212.0...220.0)
Dispersion cm3/ : 5.00
 1000H.: (9.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 23...31

Testing:

1st c-rod trav.mm : 13.10
Speed 1/min : 750...755
2nd c-rod trav.mm : 4.00
Speed 1/min : 780...790
4th speed 1/min : 1000
C-rod trav.mm : 0.30...1.70

LOWEST RATED SPEED I

Control-lever
position degrees: 9...17
Setting point w/out aux. spring
Speed 1/min : 350
Contr.-rod trav.mm: 4.9

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.50
Speed 1/min : 350
C-rod trav.mm : 4.90

SET IDLE AUXILIARY SPRING

Contr.-rod trav.mm: 2.00

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600
Del.quantity cm3/ : 218.0...224.0
1000H.: (215.0...227.0)
Dispersion cm3/ : 8.0
1000H.: (12.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 13.10
Speed 1/min : 750...755

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 220.0...240.0
1000H.: (216.0...244.0)

LOW IDLE

Speed 1/min : 350
Contr.-rod trav.mm: 4.80...5.00
Del.quantity cm3/ : 14.0...20.0
1000H.: (11.0...23.0)
Dispersion cm3/ : 8.00
1000H.: (12.00)

Remarks:

Observe VDT-I-420/120

0

D07

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 21,9 J1
Edition : 21.08.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 402 670 804
Injection pump
Pump designation : PE12P120A32OLS7813-1
EP type number : 0 412 620 811
Governor
Governor design. : RSV350...750POA825-5
Governor no. : 0 421 833 277

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM 441 A

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 150...170

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
: (5.15...5.35)
Contr.-rod trav.mm: 19.00...21.00
Cam sequence : 12-1-5-9-8-3-4-11-10
-2-6-7

SD ang. spacing°CS: 0-45-60-105-120-165-
180-225-240-285-300-

SD ang. spacing°CS: 345
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 12

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 15.00...15.10

Del.quantity cm3/ : 26.7...26.9

100H.: (26.4...27.2)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 4.8...5.0

Del.quantity cm3/ : 1.4...2.0

100H.: (1.1...2.3)

Dispersion cm3/ : 0.8

100H.: (1.2)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Contr.-rod travelmm: 0.30...1.40

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Del.quantity cm3/ : 267.0...269.0

1000H.: (264.0...272.0)

Dispersion cm3/ : 5.00

1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 23...31

Testing:

1st c-rod trav.mm : 14.00

Speed 1/min : 750...755

2nd c-rod trav.mm : 4.00

Speed 1/min : 780...790
4th speed 1/min : 1000
C-rod trav.mm : 0.30...1.70

LOWEST RATED SPEED I

Control-lever
position degrees: 9...17
Setting point w/out aux. spring
Speed 1/min : 350
Contr.-rod trav.mm: 4.9

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.50
Speed 1/min : 350
C-rod trav.mm : 4.90

SET IDLE AUXILIARY SPRING

Contr.-rod trav.mm: 2.00

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 14.00
Speed 1/min : 750...755

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 240.0...260.0
1000H.: (236.0...264.0)

Remarks:

Observe VDT-I-420/120

0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 9,0 I
Edition : 13.05.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 402 676 801
Injection pump
Pump designation : PE6P120A32ORS7102
EP type number : 0 412 626 804
Governor
Governor design. : RSV350...1100P1A512
Governor no. : 0 421 833 196

Customer-spec. information
Customer : SCANIA

Engine : DS9 40,41

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.8

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.00...5.10
 : (4.95...5.15)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 12.00...12.10

Del.quantity cm3/ : 16.3...16.5

100H.: (16.0...16.8)

Dispersion cm3/ : 0.6

100H.: (0.9)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 4.4...4.6

Del.quantity cm3/ : 1.4...1.8

100H.: (-)

Dispersion cm3/ : 0.3

100H.: (0.6)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0.30...0.70

Governor-spring reload

Notch setting x : 6.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Del.quantity cm3/ : 163.0...165.0

1000H.: (160.0...168.0)

Dispersion cm3/ : 6.00

1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 62...70

Testing:

1st c-rod trav.mm : 11.00

Speed 1/min : 1140...1150

2nd c-rod trav.mm : 4.00

Speed 1/min : 1200...1230

4th speed 1/min : 1360

C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever
position degrees: 26...34
Setting point w/out aux. spring
Speed 1/min : 350
Contr.-rod trav.mm: 4.0
Speed 1/min : 350
C-rod trav.mm : 4.50
C-rod trav.mm : 2.00
Speed 1/min : 440...500

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 1100
Del.quantity cm3/ : 164.0...172.0
1000H.: (162.0...174.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 11.00
Speed 1/min : 1140...1150

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 240.0...290.0
1000H.: (240.0...290.0)
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 350
Contr.-rod trav.mm: 4.40...4.60
Del.quantity cm3/ : 14.0...18.0
1000H.: (-)
Dispersion cm3/ : 3.00
1000H.: (6.00)

Remarks:

Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm
Because of flattening, set the spring
preload on new delivery-valve holders
to 2.9...3.1 mm.

ADDITIONAL INFORMATION

Check and set without ROBO diaphragm

For comb. with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

Test specifications approved by Scania
1986-12-04

Start of delivery - engine: 15° before
TDC

Firing sequence of engine:
1-5-3-6-2-4.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MWM 10,8 B
 Edition : 09.03.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 402 676 802
 Injection pump
 Pump designation : PE6P120A32ORS7124
 EP type number : 0 412 626 813
 Governor
 Governor design. : RSUV300...1150POA355
 Governor no. : 0 421 829 102

Customer-spec. information
 Customer : MWM

Engine : D-TBD 234 V6

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0.8

Test inj. tubing : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 6- 3- 2- 5- 4

SD ang. spacing°CS: 0-90-120-210-240-330
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 800

Contr.-rod trav.mm: 14.90...15.00

Del.quantity cm3/ : 26.0...26.2

100H.: (25.7...26.5)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 300

Contr.-rod trav. m: 6.50...6.70

Del.quantity cm3/ : 3.0...4.0

100H.: (2.7...4.3)

Dispersion cm3/ : 0.6

100H.: (1.0)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Contr.-rod travelmm: 0.30...1.00

Governor-spring reload

Notch setting x : 4.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 800

Charge press. hPa : 900

Del.quantity cm3/ : 260.0...262.0

1000H.: (257.0...265.0)

Dispersion cm3/ : 5.00

1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 59...67

Testing:

1st c-rod trav.mm : 13.90

Speed 1/min : 1190...1200

2nd c-rod trav.mm : 4.00

Speed 1/min : 1265...1295

4th speed 1/min : 1430

C-rod trav.mm : 0.30...1.70

LOWEST RATED SPEED I

Control-lever
position degrees: 17...25
Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 6.1
Speed 1/min : 300
C-rod trav.mm : 6.60
C-rod trav.mm : 2.00
Speed 1/min : 400...460

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 900
Contr.-rod trav.mm: 14.90...15.00

Measurement

Speed 1/min : 500
1st pressure hPa : -
C-rod trav.mm : 9.30...9.50
2nd pressure hPa : 625
C-rod trav.mm : 14.70...14.80
3rd pressure hPa : 250
C-rod trav.mm : 11.60...11.80

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 900
Speed 1/min : 1150
Del.quantity cm3/ : 257.0...263.0
1000H.: (254.0...266.0)
Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 128.0...132.0
1000H.: (126.0...134.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 13.90
Speed 1/min : 1190...1200

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 200.0...240.0
1000H.: (-)

Remarks:

APPLICATION

Installation 2300

Speed 1/min : 945...975
4th speed 1/min : 1130
C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever
position degrees: 65...73
Setting point w/out aux. spring
Speed 1/min : 200
Contr.-rod trav.mm: 4.6

Testing:

Speed 1/min : 100
C-rod trav.mm min : 6.50
Speed 1/min : 200
C-rod trav.mm : 5.10
C-rod trav.mm : 2.00
Speed 1/min : 250...300

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 11.80
Speed 1/min : 920...925

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 510.0...540.0
1000H.: (-)
Contr.-rod trav.mm: 20.00...21.00

Remarks:

Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm
Because of flattening, set the spring
preload on new delivery-valve holders
to 2.9...3.1 mm.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,7 G1
Edition : 1.9.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 402 678 803
Injection pump
Pump designation : PE8P120A32OLS7801-1
EP type number : 0 412 628 818
Governor
Governor design. : RSV350...750POA825-3
Governor no. : 0 421 833 260

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM442A

1st version kW : 240.0
Speed 1/min: 1500

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
: (5.15...5.35)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 8- 7- 2- 6- 3- 5-
4- 1

SD ang. spacing°CS: 0-45-90-135-180-225-
270-315

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 15.10...15.20

Del.quantity cm3/ : 23.3...23.5

100H.: (23.0...23.8)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 5.2...5.4

Del.quantity cm3/ : 1.6...2.2

100H.: (1.3...2.5)

Dispersion cm3/ : 0.8

100H.: (1.2)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Contr.-rod travelmm: 0.30...0.70

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Del.quantity cm3/ : 233.0...235.0

1000H.: (230.0...238.0)

Dispersion cm3/ : 5.00

1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 74...82

Testing:

1st c-rod trav.mm : 14.10

Speed 1/min : 750...755
2nd c-rod trav.mm : 4.00
Speed 1/min : 775...788
4th speed 1/min : 1400
C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever
position degrees: 60...68
Setting point w/out aux. spring
Speed 1/min : 350
Contr.-rod trav.mm: 5.3

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.50
Speed 1/min : 350
C-rod trav.mm : 5.30
C-rod trav.mm : 2.00
Speed 1/min : 350...410

SET IDLE AUXILIARY SPRING

Contr.-rod trav.mm: 2.00

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600
Del.quantity cm3/ : 233.0...239.0
1000H.: (230.0...242.0)
Dispersion cm3/ : 8.0
1000H.: (12.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 14.10
Speed 1/min : 750...755

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 230.0...250.0
1000H.: (226.0...254.0)

Remarks:
APPLICATION
Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14.7 G2
Edition : 1.9.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 402 678 804
Injection pump
Pump designation : PE8P120A32OLS7801-1
EP type number : 0 412 628 818
Governor
Governor design. : RSV350...750POA825-4
Governor no. : 0 421 833 261

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM442LA

1st version kW : 255.0
Speed 1/min: 1500

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 8- 7- 2- 6- 3- 5-
 4- 1

SD ang. spacing°CS: 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 15.70...15.80

Del.quantity cm3/ : 24.1...24.3

100H.: (23.8...24.6)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 5.2...5.4

Del.quantity cm3/ : 1.6...2.2

100H.: (1.3...2.5)

Dispersion cm3/ : 0.8

100H.: (1.2)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Contr.-rod travelmm: 0.30...0.70

Governor-spring reload

Notch setting x : 2.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Del.quantity cm3/ : 241.0...243.0

1000H.: (238.0...246.0)

Dispersion cm3/ : 5.00

1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 74...82

Testing:

1st c-rod trav.mm : 14.70
Speed 1/min : 750...755
2nd c-rod trav.mm : 4.00
Speed 1/min : 775...78850
4th speed 1/min : 1400
C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever
position degrees: 60...68
Setting point w/out aux. spring
Speed 1/min : 350
Contr.-rod trav.mm: 5.3

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.50
Speed 1/min : 350
C-rod trav.mm : 5.30
C-rod trav.mm : 2.00
Speed 1/min : 350...410

SET IDLE AUXILIARY SPRING

Contr.-rod trav.mm: 2.00

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600
Del.quantity cm3/ : 246.0...252.0
1000H.: (243.0...255.0)
Dispersion cm3/ : 8.0
1000H.: (12.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 14.70
Speed 1/min : 750...755

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 250.0...270.0
1000H.: (246.0...274.0)

Remarks:

APPLICATION

Generator

Testing:
1st c-rod trav.mm : 12.40
Speed 1/min : 1145...1160
2nd c-rod trav.mm : 4.00
Speed 1/min : 1220...1250
4th speed 1/min : 1350
C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Control-lever
position degrees: 70...76
Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 5.9

Testing:

Speed 1/min : 100
C-rod trav.mm min : 7.50
Speed 1/min : 300
C-rod trav.mm : 5.90
C-rod trav.mm : 2.00
Speed 1/min : 380...420

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : -
Contr.-rod trav.mm: 10.70...11.00

Measurement

Speed 1/min : 500
1st pressure hPa : 230
C-rod trav.mm : 11.00...11.20
2nd pressure hPa : 370
C-rod trav.mm : 12.40...12.60

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 750
Speed 1/min : 600
Del.quantity cm3/ : 195.0...198.0
1000H.: (192.0...201.0)
Dispersion cm3/ : 8.0
1000H.: (12.0)
Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 144.0...146.0
1000H.: (141.0...149.0)

Dispersion cm3/ : 8.0
1000H.: (12.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 12.40
Speed 1/min : 1145...1160

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 150.0...170.0
1000H.: (146.0...174.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : PER 12,2 A
Edition : 1.9.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 402 746 807

Injection pump
Pump designation : PES6P120A720RS7121
EP type number : 0 412 726 804
Governor
Governor design. : RQV250...950PA793-1
Governor no. : 0 421 813 591

Customer-spec. information
Customer : PERKINS

Engine : EAGLE LE

1st version kW : 300.0
Speed 1/min: 1900

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.80...4.90
 : (4.75...4.95)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 4- 2- 6- 3- 5

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 12.60...12.70

Del.quantity cm3/ : 20.9...21.1

100H.: (20.6...21.4)

Dispersion cm3/ : 0.6

100H.: (0.9)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 4.8...5.0

Del.quantity cm3/ : 1.3...1.7

100H.: (-)

Dispersion cm3/ : 0.3

100H.: (0.6)

(6) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 250

Sleeve travel mm: 1.10...1.20

2nd speed 1/min: 300

Sleeve travel mm: 1.70...2.00

3rd speed 1/min: 500

Sleeve travel mm: 3.00...3.30

4th speed 1/min: 1000

Sleeve travel mm: 8.20...8.40

5th speed 1/min: 1070

Sleeve travel mm: 9.30...9.60

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1010

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Charge press. hPa : 900

Del.quantity cm3/ : 209.0...211.0
1000H.: (206.0...214.0)
Dispersion cm3/ : 6.00
1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 50...58

Testing:

1st c-rod trav.mm : 11.60

Speed 1/min : 990...1000

2nd c-rod trav.mm : 4.00

Speed 1/min : 1055...1085

4th speed 1/min : 1200

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 11...19

Testing:

Speed 1/min : 100

C-rod trav.mm min : 6.30

Speed 1/min : 250

C-rod trav.mm : 4.80...5.00

CONSTANT REGULATION

Speed 1/min : 250...350

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 900

Contr.-rod trav.mm: 12.60...12.70

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 11.10...11.20

2nd pressure hPa : 510

C-rod trav.mm : 12.20...12.30

3rd pressure hPa : 350

C-rod trav.mm : 11.40...11.60

SWITCH-OVER POINT

Speed 1/min : 170 (190)

FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -

Speed 1/min : 500

Del.quantity cm3/ : 160.0...164.0

1000H.: (158.0...166.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 11.60
Speed 1/min : 990...1000

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm³/ : 130.0...170.0
1000H.: (-)
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 4.80...5.00
Del.quantity cm³/ : 13.0...17.0
1000H.: (-)
Dispersion cm³/ : 3.00
1000H.: (6.00)

Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm
Because of flattening, set the spring
preload on new delivery-valve holders
to 2.9...3.1 mm.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet	: MB 11.7 F
Edition	: 31.07.87
Superceeded	: 9.86
Calibrating oil	: ISO-4113
Combinatici no.	: 0 402 746 808
Injection pump	
Pump designation	: PES6P120A720LS7107
EP type number	: 0 412 726 801
Governor	
Governor design.	: RQ300/1100PA805
Governer no.	: 0 421 801 352

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM447ha

1st version kW : 206.0
Speed 1/min: 2200

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values

START OF DELIVERY

Test pressure, bar: 25...27

```

Prestroke mm      : 5.20...5.30
                  : (5.15...5.35)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence      : 6- 2- 4- 1- 5- 3

```

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + -^o: 0.50 (0.75)

SD mark cyl. no. : 6

BASIC SETTING

1st speed 1/mi: 1100

Contr.-rod trav.mm: 13.40...13.50

Del.quantity cm3/ : 19.7...19.9

100H.: (19.4...20.2)

Dispersion cm³/ : 0.5

 100H.: (0.9)

```

2nd speed      1/min: 300
Contr.-rod trav. m: 5.90...6.00
Del.quantity   cm3/ : 1.4...2.0
                100H.: (1.1...2.3)
Dispersion     cm3/ : 0.8
                100H.: (1.2)

```

(B) Setting of injection pump with externally-mounted governor

SLEEVE TRAVELS

1st speed	1/min:	300
Sleeve travel	mm:	2.10...2.30
2nd speed	1/min:	650
Sleeve travel	mm:	5.90...6.10
3rd speed	1/min:	1050
Sleeve travel	mm:	6.20...6.40
4th speed	1/min:	1225
Sleeve travel	mm:	9.10...9.30

SLEEVE POSITION

```
Control-lever position
Degree: -2
Speed      17/min: 650
Cont.-rod travelmm: 19.20...20.80
```

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1100
Charge press. hPa : 750

Del.quantity cm3/ : 197.0...199.0
1000H.: (194.0...202.0)
Dispersion cm3/ : 5.00
1000H.: (9.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 92...98

Setting point:
Speed 1/min : 650
Contr.-rod trav.mm: 20.0

Testing:

1st c-rod trav.mm : 12.40
Speed 1/min : 1145...1160
2nd c-rod trav.mm : 4.00
Speed 1/min : 1220...1250
4th speed 1/min : 1350
C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Control-lever
position degrees: 69...75
Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 5.9

Testing:

Speed 1/min : 100
C-rod trav.mm min : 7.50
Speed 1/min : 300
C-rod trav.mm : 5.90
C-rod trav.mm : 2.00
Speed 1/min : 380...420

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : -
Contr.-rod trav.mm: 11.00...11.20

Measurement

Speed 1/min : 500
1st pressure hPa : 230
C-rod trav.mm : 11.30...11.50
2nd pressure hPa : 370
C-rod trav.mm : 12.70...12.90

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 750
Speed 1/min : 600
Del.quantity cm3/ : 193.0...196.0
1000H.: (190.0...199.0)
Dispersion cm3/ : 8.0
1000H.: (12.0)
Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 144.0...146.0
1000H.: (141.0...149.0)
Dispersion cm3/ : 8.0
1000H.: (12.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than
full-load trav.mm: 12.40
Speed 1/min : 1145...1160

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 150.0...170.0
1000H.: (146.0...174.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : PER 12,2 B
Edition : 1.9.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 402 746 809

Injection pump
Pump designation : PES6P120A72ORS7132
EP type number : 0 412 726 806
Governor
Governor design. : RQ750PA836
Governor no. : 0 421 801 373

Customer-spec. information
Customer : PERKINS

Engine : EAGLE LE

1st version kW : 240.0
Speed 1/min: 1500

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values _ _ _ _

START OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 4.50...4.60
 : (4.45...4.65)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 4- 2- 6- 3- 5

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 14.40...14.50

Del.quantity cm3/ : 27.4...27.8

100H.: (27.1...28.1)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 300.0
Contr.-rod trav. m: 7.9...8.1
Del.quantity cm3/ : 3.8...4.4
100H.: (-)
Dispersion cm3/ : 0.8
100H.: (1.2)

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 700
Del.quantity cm3/ : 274.0...278.0
1000H.: (271.0...281.0)
Dispersion cm3/ : 5.00
1000H.: (9.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 26...34

Testing:
1st c-rod trav.mm : 13.40
Speed 1/min : 750...755
2nd c-rod trav.mm : 4.00
Speed 1/min : 780...790
4th speed 1/min : 820
C-rod trav.mm : 0.00...1.00

SWITCH-OVER POINT

Speed 1/min : 690 (0)

ROTATIONAL-SPEED LIMITATION

1st version

E02

1mm control-rod travel less than

full-load trav.mm: 13.40
Speed 1/min : 750...755

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 180.0...200.0
1000H.: (-)
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 300
Contr.-rod trav.mm: 7.90...8.10
Del.quantity cm3/ : 38.0...44.0
1000H.: (-)
Dispersion cm3/ : 8.00
1000H.: (12.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 11,7 C1
Edition : 09.03.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 402 776 802
Injection pump
Pump designation : PES6P120A720LS7120-1
EP type number : 0 412 726 808
Governor
Governor design. : RSV350..1100POAS26
Governor no. : 0 421 833 255

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM427 A

1st version kW : 206.0
Speed 1/min: 2200

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 6- 2- 4- 1- 5- 3

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 6

BASIC SETTING

1st speed 1/mi: 1080

Contr.-rod trav.mm: 13.20...13.30

Del.quantity cm3/ : 19.6...19.8

100H.: (19.3...20.1)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 5.0...5.2

Del.quantity cm3/ : 1.4...2.0

100H.: (1.1...2.3)

Dispersion cm3/ : 0.8

100H.: (1.2)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Contr.-rod travelmm: 0.30...1.00

Governor-spring reload

Notch setting x : 3.50

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1080

Charge press. hPa : 750

Del.quantity cm3/ : 196.0...198.0

1000H.: (193.0...201.0)

Dispersion cm3/ : 5.00

1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 48...56

Testing:
1st c-rod trav.mm : 12.20
Speed 1/min : 1130...1140
2nd c-rod trav.mm : 4.00
Speed 1/min : 1200...1230
4th speed 1/min : 1350
C-rod trav.mm : 0.00...1.70

LOWEST RATED SPEED I

Control-lever
position degrees: 21...29
Setting point w/out aux. spring
Speed 1/min : 350
Contr.-rod trav.mm: 5.6
Speed 1/min : 350
C-rod trav.mm : 5.60

SET IDLE AUXILIARY SPRING

Contr.-rod trav.mm: 2.00

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 750
Contr.-rod trav.mm: 13.20...13.30

Measurement

Speed 1/min : 500

1st pressure hPa : 320
C-rod trav.mm : 11.40...11.60
2nd pressure hPa : -
C-rod trav.mm : 10.70...10.90

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 750
Speed 1/min : 750
Del.quantity cm3/ : 202.0...206.0
1000H.: (199.0...209.0)
Dispersion cm3/ : 8.0
1000H.: (12.0)
Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 143.0...145.0
1000H.: (140.0...148.0)
Dispersion cm3/ : 8.0
1000H.: (12.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 12.20

Speed 1/min : 1130...1140

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 180.0...200.0
1000H.: (176.0...204.0)

Remarks:

Hydraulic latching of starting
delivery.

Latching at 0.75 bar...0.85 bar.

Unlatching at 0.35 bar...0.45 bar.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 11,7 G1
Edition : 21.08.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 402 776 803

Injection pump
Pump designation : PES6P120A720LS7107-1
EP type number : 0 412 726 805
Governor
Governor design. : RSV350..750POAS20-1
Governor no. : 0 421 833 262

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM447 A

1st version kW : 180.0
Speed 1/min: 1500

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 6- 2- 4- 1- 5- 3

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 6

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 14.80...14.90

Del.quantity cm3/ : 22.4...22.6
100H.: (22.1...22.9)

Dispersion cm3/ : 0.5
100H.: (0.9)

2nd speed 1/min: 350.0
Contr.-rod trav. m: 5.5...5.8
Del.quantity cm3/ : 1.4...2.0
100H.: (1.1...2.3)
Dispersion cm3/ : 0.8
100H.: (1.2)

SLEEVE POSITION

Control-lever position
Degree: -3
Speed 1/min: 800
Cont.-rod travelmm: 0.30...1.00

Governor-spring reload
Notch setting x : 2.75

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 700
Del.quantity cm3/ : 224.0...226.0
1000H.: (221.0...229.0)
Dispersion cm3/ : 5.00
1000H.: (9.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 27...35

Testing:

1st c-rod trav.mm : 13.80
Speed 1/min : 750...755
2nd c-rod trav.mm : 4.00
Speed 1/min : 775...788

LOWEST RATED SPEED I

Control-lever
position degrees: 35...27
Setting point w/out aux. spring
Speed 1/min : 350
Contr.-rod trav.mm: 5.6

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.50
Speed 1/min : 350
C-rod trav.mm : 5.60

SET IDLE AUXILIARY SPRING

Contr.-rod trav.mm: 2.00

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 230.0...250.0
1000H.: (226.0...254.0)

Remarks:

Observe VDT-I-420/120

APPLICATION

Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 11,7 C2
Edition : 1.9.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 402 776 804

Injection pump
Pump designation : PES6P120A720LS7120
EP type number : 0 412 726 803
Governor
Governor design. : RSV350..1050POA529
Governor no. : 0 421 833 267

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM447 A

1st version kW : 210.0
Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 6- 2- 4- 1- 5- 3

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 6

BASIC SETTING

1st speed 1/mi: 600

Contr.-rod trav.mm: 14.10...14.30

Del.quantity cm3/ : 20.2...20.4

100H.: (19.9...20.7)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 5.6...5.8

Del.quantity cm3/ : 1.4...2.0

100H.: (1.1...2.3)

Dispersion cm3/ : 0.8

100H.: (1.2)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0.30...0.70

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 600

Charge press. hPa : 600

Del.quantity cm3/ : 202.0...204.0

1000H.: (199.0...207.0)

Dispersion cm3/ : 5.00

1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 48...56

Testing:

1st c-rod trav.mm : 13.50

Speed 1/min : 1090...1100

2nd c-rod trav.mm : 4.00
Speed 1/min : 1190...1220
4th speed 1/min : 1300
C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever
position degrees: 22...30
Setting point w/out aux. spring
Speed 1/min : 350
Contr.-rod trav.mm: 5.7
Speed 1/min : 350
C-rod trav.mm : 5.70

SET IDLE AUXILIARY SPRING

Contr.-rod trav.mm: 2.00

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 1050
C-rod trav.mm : 14.80...14.90
2nd speed 1/min : 850
C-rod trav.mm : 15.00...15.20
3rd speed 1/min : 960
C-rod trav.mm : 14.90...15.00

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 600
Pressure hPa : 600
Contr.-rod trav.mm: 14.10...14.30

Measurement

Speed 1/min : 600
1st pressure hPa : 300
C-rod trav.mm : 12.40...12.60
2nd pressure hPa : 400
C-rod trav.mm : 13.40...13.60
3rd pressure hPa : 800
C-rod trav.mm : 14.60...14.80

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 1100
Speed 1/min : 1050
Del.quantity cm3/ : 220.0...223.0
1000H.: (217.0...226.0)
Dispersion cm3/ : 8.0
1000H.: (12.0)
Charge press. hPa : 1100
Speed 1/min : 800
Del.quantity cm3/ : 228.0...234.0
1000H.: (225.0...237.0)

Dispersion cm3/ : 8.0
1000H.: (12.0)
Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 149.0...152.0
1000H.: (146.0...155.0)
Dispersion cm3/ : 8.0
1000H.: (12.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 13.50
Speed 1/min : 1090...1100

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 190.0...210.0
1000H.: (186.0...214.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CUM 8,3 D 1
Edition : 25.08.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 403 436 102
Injection pump
Pump designation : PES6MW100/120RS1143
EP type number : 0 413 406 137
Governor
Governor design. : RQV300...1050MW78
Governor no. : 0 420 083 118

Customer-spec. information
Customer : CUMMINS/US

Engine : 6 CTA-830

1st version kW : 175.0
Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.6

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 30...32

Prestroke mm : 3.15...3.25
 : (3.10...3.30)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1050

Contr.-rod trav.mm: 12.60...12.70

Del.quantity cm3/ : 14.9...15.1

100H.: (14.7...15.3)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 7.7...7.8

Del.quantity cm3/ : 1.6...2.0

100H.: (1.4...2.2)

Dispersion cm3/ : 0.3

100H.: (0.5)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 1100

Sleeve travel mm: 7.80...8.00

2nd speed 1/min: 1170

Sleeve travel mm: 8.50...8.90

3rd speed 1/min: 300

Sleeve travel mm: 0.80...1.20

4th speed 1/min: 600

Sleeve travel mm: 3.20...3.80

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1150

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1050

Charge press. hPa : 700

Del.quantity cm3/ : 149.0...151.0

1000H.: (147.0...153.0)

Dispersion cm3/ : 3.50
1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 44...52

Testing:

1st c-rod trav.mm : 11.60

Speed 1/min : 1120...1130

2nd c-rod trav.mm : 4.00

Speed 1/min : 1205...1235

4th speed 1/min : 1300

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 10...18

Setting point w/out aux. spring

Speed 1/min : 300

Contr.-rod trav.mm: 7.7

Testing:

Speed 1/min : 100

C-rod trav.mm min : 9.30

Speed 1/min : 300

C-rod trav.mm : 7.70...7.80

CONSTANT REGULATION

Speed 1/min : 320...550

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : -

Contr.-rod trav.mm: 10.00...10.10

Measurement

Speed 1/min : 500

1st pressure hPa : 200

C-rod trav.mm : 11.00...11.10

2nd pressure hPa : 360

C-rod trav.mm : 12.00...12.30

3rd pressure hPa : 700

C-rod trav.mm : 12.60...12.70

SWITCH-OVER POINT

Speed 1/min : 220 (230)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 700

Speed 1/min : 800
Del.quantity cm3/ : 147.0...151.0
1000H.: (145.0...153.0)
Dispersion cm3/ : 5.00
1000H.: (7.00)
Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 90.5...92.5
1000H.: (88.5...94.5)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 11.60
Speed 1/min : 1120...1130

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 205.0...225.0
1000H.: (202.0...228.0)
Contr.-rod trav.mm: 19.00...21.00

LOW IDLE

Speed 1/min : 300
Contr.-rod trav.mm: 7.70...7.80
Del.quantity cm3/ : 16.0...20.0
1000H.: (14.0...22.0)
Dispersion cm3/ : 3.50
1000H.: (5.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 4,0 A 14
Edition : 25.08.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 403 444 110

Injection pump
Pump designation : PES4MW100/72ORS1127
EP type number : 0 413 404 103
Governor
Governor design. : RQV300...1300MW48-1
Governor no. : 0 420 083 084

Customer-spec. information
Customer : DB

Engine : OM 364 A

1st version kW : 85.0
Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.70...3.80
: (3.65...3.85)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 3- 4- 2

SD ang. spacing⁰CS: 0-90-180-270
Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1300

Contr.-rod trav.mm: 11.10...11.20

Del.quantity cm3/ : 8.5...8.7

100H.: (8.3...8.9)

Dispersion cm3/ : 0.35

100H.: (0.6)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 7.8...7.9

Del.quantity cm3/ : 1.0...1.4

100H.: (0.8...1.6)

Dispersion cm3/ : 0.35

100H.: (0.5)

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1330

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1300

Del.quantity cm3/ : 85.0...87.0

1000H.: (83.0...89.0)

Dispersion cm3/ : 3.50

1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 50...58

Testing:

1st c-rod trav.mm : 10.10

Speed 1/min : 1340...1350

2nd c-rod trav.mm : 4.00

Speed 1/min : 1430...1460

4th speed 1/min : 1550

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 17...25

Setting point w/out aux. spring

Speed 1/min : 300
Contr.-rod trav.mm: 7.85

Dispersion cm³/ : 3.50
1000H.: (5.50)

Testing:

Speed 1/min : 100
C-rod trav.mm min : 9.50
Speed 1/min : 300
C-rod trav.mm : 7.80...7.90

Remarks:

CONSTANT REGULATION

Speed 1/min : 330...600

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1300
C-rod trav.mm : 11.10...11.20
2nd speed 1/min : 750
C-rod trav.mm : 11.90...12.10
3rd speed 1/min : 585
C-rod trav.mm : 12.10...12.30
4th speed 1/min : 1000
C-rod trav.mm : 11.10...11.30

SWITCH-OVER POINT

Speed 1/min : 230 (250)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 750
Del.quantity cm³/ : 84.5...86.5
1000H.: (82.5...88.5)
Dispersion cm³/ : 5.00
1000H.: (7.00)
Speed 1/min : 585
Del.quantity cm³/ : 80.5...83.5
1000H.: (78.5...86.5)
Dispersion cm³/ : 5.00
1000H.: (7.00)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 10.10
Speed 1/min : 1340...1350

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm³/ : 80.0...90.0
1000H.: (77.0...93.0)

LOW IDLE

Speed 1/min : 300
Contr.-rod trav.mm: 7.80...7.90
Del.quantity cm³/ : 10.0...14.0
1000H.: (8.0...16.0)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 4,0 A 19
Edition : 25.08.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 403 444 112
Injection pump
Pump designation : PES4MW100/72ORS1127
EP type number : 0 413 404 103
Governor
Governor design. : RQV300...1300MW48-2
Governor no. : 0 420 083 110

Customer-spec. information
Customer : DB

Engine : OM 364 A

1st version kW : 85.0
Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.70...3.80
: (3.65...3.85)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 3- 4- 2

SD ang. spacing^oCS: 0-90-180-270
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1300

Contr.-rod trav.mm: 11.10...11.20

Del.quantity cm3/ : 8.5...8.7

100H.: (8.3...8.9)

Dispersion cm3/ : 0.35

100H.: (0.6)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 7.8...7.9

Del.quantity cm3/ : 1.0...1.4

100H.: (0.8...1.6)

Dispersion cm3/ : 0.35

100H.: (0.5)

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1330

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1300

Del.quantity cm3/ : 85.0...87.0

1000H.: (83.0...89.0)

Dispersion cm3/ : 3.50

1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 50...58

Testing:

1st c-rod trav.mm : 10.10

Speed 1/min : 1340...1350

2nd c-rod trav.mm : 4.00

Speed 1/min : 1430...1460

4th speed 1/min : 1550

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 17...25

Setting point w/out aux. spring

Speed 1/min : 300

Contr.-rod trav.mm: 7.85

Testing:

Speed 1/min : 100

C-rod trav.mm min : 9.50

Speed 1/min : 300

C-rod trav.mm : 7.80...7.90

CONSTANT REGULATION

Speed 1/min : 330...600

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1300

C-rod trav.mm : 11.10...11.20

2nd speed 1/min : 750

C-rod trav.mm : 11.80...12.10

3rd speed 1/min : 585

C-rod trav.mm : 12.10...12.30

4th speed 1/min : 1000

C-rod trav.mm : 11.10...11.30

SWITCH-OVER POINT

Speed 1/min : 230 (250)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 750

Del.quantity cm3/ : 84.5...86.5

1000H.: (82.5...88.5)

Dispersion cm3/ : 5.00

1000H.: (7.00)

Speed 1/min : 585

Del.quantity cm3/ : 80.5...83.5

1000H.: (78.5...86.5)

Dispersion cm3/ : 5.00

1000H.: (7.00)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 10.10

Speed 1/min : 1340...1350

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 80.0...90.0

1000H.: (77.0...93.0)

LOW IDLE

Speed 1/min : 300

Contr.-rod trav.mm: 7.80...7.90

Del.quantity cm3/ : 10.0...14.0

1000H.: (8.0...16.0)

Dispersion cm³/ : 3.50
1000H.: (5.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 4,0 A 20
Edition : 25.08.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 403 444 113

Injection pump
Pump designation : PES4MW100/72ORS1151
EP type number : 0 413 404 104
Governor
Governor design. : RQV300...1300MW50-3
Governor no. : 0 420 083 129

Customer-spec. information
Customer : DB

Engine : OM 364 LA

1st version kW : 100.0
Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.70...3.80
: (3.65...3.85)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 3- 4- 2

SD ang. spacing^oCS: 0-90-180-270
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1300

Contr.-rod trav.mm: 12.60...12.70

Del.quantity cm³/ : 9.8...10.0

100H.: (9.6...10.2)

Dispersion cm³/ : 0.3

100H.: (0.6)

2nd speed 1/min: 300

Contr.-rod trav. m: 6.8...6.9

Del.quantity cm³/ : 1.0...1.4

100H.: (0.7...1.6)

Dispersion cm³/ : 0.3

100H.: (0.5)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 1340

Sleeve travel mm: 8.50...8.70

2nd speed 1/min: 1450

Sleeve travel mm: 9.50...9.90

3rd speed 1/min: 500

Sleeve travel mm: 2.70...3.30

4th speed 1/min: 300

Sleeve travel mm: 1.30...1.70

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1340

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1300

Charge press. hPa : 700

Del.quantity cm³/ : 98.0...100.0

1000H.: (96.0...102.0)

Dispersion cm³/ : 3.50

1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 49...57

Testing:

1st c-rod trav.mm : 11.60

Speed 1/min : 1340...1350

2nd c-rod trav.mm : 4.00

Speed 1/min : 1445...1475

4th speed 1/min : 1550

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 16...24

Setting point w/out aux. spring

Speed 1/min : 300

Contr.-rod trav.mm: 6.8

Testing:

Speed 1/min : 100

C-rod trav.mm min : 8.40

Speed 1/min : 300

C-rod trav.mm : 6.80...6.90

CONSTANT REGULATION

Speed 1/min : 320...550

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 200

Contr.-rod trav.mm: 11.30...11.40

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 10.50...10.60

2nd pressure hPa : 335

C-rod trav.mm : 12.10...12.40

3rd pressure hPa : 700

C-rod trav.mm : 12.60...12.70

SWITCH-OVER POINT

Speed 1/min : 220 (250)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 700

Speed 1/min : 600

Del.quantity cm³/ : 82.5...85.5

1000H.: (80.0...88.5)

Dispersion cm³/ : 5.00

1000H.: (7.00)

Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 49.0...51.0
1000H.: (47.0...53.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 11.60
Speed 1/min : 1340...1350

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 85.0...95.0
1000H.: (82.0...98.0)

LOW IDLE

Speed 1/min : 300
Contr.-rod trav.mm: 6.80...6.90
Del.quantity cm3/ : 10.0...14.0
1000H.: (7.5...16.5)
Dispersion cm3/ : 3.50
1000H.: (5.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 5,7 A 12
Edition : 20.08.87
Superceeded : 11.85
Calibrating oil : ISO-4113

Combination no. : 0 403 446 124

Injection pump
Pump designation : PES6MW100/72ORS1101
EP type number : 0 413 406 102
Governor
Governor design. : RQV300...1300MW34
Governor no. : 0 420 083 032

Customer-spec. information
Customer : DB

Engine : OM362LA

1st version kW : 141.0
Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.20...3.30
: (3.15...3.35)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - ^o : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1300

Contr.-rod trav.mm: 11.90...12.00

Del.quantity cm3/ : 9.4...9.6

100H.: (9.2...9.8)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 6.0...6.1

Del.quantity cm3/ : 1.0...1.4

100H.: (0.8...1.7)

Dispersion cm3/ : 0.3

100H.: (0.6)

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1300

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1300

Charge press. hPa : 700

Del.quantity cm3/ : 94.5...96.5

1000H.: (92.5...98.5)

Dispersion cm3/ : 3.50

1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 57...65

Testing:

1st c-rod trav.mm : 10.90

Speed 1/min : 1340...1350

2nd c-rod trav.mm : 4.00

Speed 1/min : 1460...1490

4th speed 1/min : 1600

C-rod trav.mm : 0.10...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 16...24

Setting point w/out aux. spring

Speed 1/min : 300

Contr.-rod trav.mm: 6.0

Testing:

Speed 1/min : 100

C-rod trav.mm min : 7.60

Speed 1/min : 300

C-rod trav.mm : 6.00...6.10

C-rod trav.mm : 2.00

Speed 1/min : 460...520

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : -

Contr.-rod trav.mm: 10.20...10.30

Measurement

Speed 1/min : 500

1st pressure hPa : 100

C-rod trav.mm : 0.40...0.50

2nd pressure hPa : 125

C-rod trav.mm : 0.90...1.10

3rd pressure hPa : 700

C-rod trav.mm : 11.90...12.00

SWITCH-OVER POINT

Speed 1/min : 230 (250)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 700

Speed 1/min : 800

Del.quantity cm3/ : 92.0...96.0

1000H.: (90.0...98.0)

Dispersion cm3/ : 5.0

1000H.: (7.00)

Charge press. hPa : -

Speed 1/min : 500

Del.quantity cm3/ : 54.5...56.5

1000H.: (52.5...58.5)

Dispersion cm3/ : 3.50

1000H.: (6.00)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 10.90

Speed 1/min : 1340...1350

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 80.0...90.0
1000H.: (77.0...93.0)

LOW IDLE

Speed 1/min : 300
Contr.-rod trav.mm: 6.00...6.10
Del.quantity cm3/ : 10.5...14.5
1000H.: (8.0...17.0)
Dispersion cm3/ : 3.50
1000H.: (5.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 5,7 A 11
Edition : 20.08.87
Superceeded : 12.83
Calibrating oil : ISO-4113

Combination no. : 0 403 446 134

Injection pump
Pump designation : PES6MW100/72ORS1101
EP type number : 0 413 406 102
Governor
Governor design. : RQV300...1300MW44
Governor no. : 0 420 083 053

Customer-spec. information
Customer : DB

Engine : OM362LA

1st version kW : 141.0
Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.20...3.30
: (3.15...3.35)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1300

Contr.-rod trav.mm: 11.90...12.00

Del.quantity cm3/ : 9.4...9.6

100H.: (9.2...9.8)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 300.0
Contr.-rod trav. m: 6.0...6.1
Del.quantity cm3/ : 1.0...1.4
100H.: (0.8...1.7)
Dispersion cm3/ : 0.3
100H.: (0.5)

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1330
Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1300
Charge press. hPa : 700
Del.quantity cm3/ : 94.5...96.5
1000H.: (92.5...98.5)
Dispersion cm3/ : 3.50
1000H.: (6.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 60...68

Testing:
1st c-rod trav.mm : 10.90
Speed 1/min : 1340...1350
2nd c-rod trav.mm : 4.00
Speed 1/min : 1435...1465
4th speed 1/min : 1600
C-rod trav.mm : 0.10...1.00

LOWEST RATED SPEED 1

Control-lever
position degrees: 7...15

Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 6.0

Testing:

Speed 1/min : 100
C-rod trav.mm min : 7.6
Speed 1/min : 300
C-rod trav.mm : 6.00...6.10
C-rod trav.mm : 2.00
Speed 1/min : 520...580

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : -
Contr.-rod trav.mm: 10.00...10.10

Measurement

Speed 1/min : 500
1st pressure hPa : 100
C-rod trav.mm : 0.40...0.50
2nd pressure hPa : 125
C-rod trav.mm : 0.90...1.10
3rd pressure hPa : 700
C-rod trav.mm : 11.90...12.00

SWITCH-OVER POINT

Speed 1/min : 230 (250)

FUEL-DELIVERY CHARACTERISTICS

1st version
Charge press. hPa : 700
Speed 1/min : 800
Del.quantity cm3/ : 92.0...96.0
1000H.: (90.0...98.0)
Dispersion cm3/ : 5.00
1000H.: (7.00)
Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 51.5...53.5
1000H.: (49.5...55.5)
Dispersion cm3/ : 3.50
1000H.: 6.00

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 10.90
Speed 1/min : 1340...1350

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 80.0...90.0
1000H.: (77.0...93.0)

LOW IDLE

Speed 1/min : 300
Contr.-rod trav.mm: 6.00...6.10
Del.quantity cm3/ : 10.5...14.5
1000H.: (8.0...17.0)
Dispersion cm3/ : 3.5
1000H.: (5.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 8,7 0
Edition : 20.08.87
Superceeded : 09.83
Calibrating oil : ISO-4113

Combination no. : 0 403 446 143

Injection pump
Pump designation : PES6MW100/72ORS1101
EP type number : 0 413 406 102
Governor
Governor design. : RQV300...1300MW44-1
Governor no. : 0 420 083 064

Customer-spec. information
Customer : DB

Engine : OM362LA

1st version kW : 141.0
Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.20...3.30
: (3.15...3.35)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1300

Contr.-rod trav.mm: 11.90...12.00

Del.quantity cm3/ : 9.4...9.6

100H.: (9.2...9.8)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 300.0
Contr.-rod trav. m: 6.0...6.1
Del.quantity cm3/ : 1.0...1.4
100H.: (0.8...1.7)
Dispersion cm3/ : 0.3
100H.: (0.5)

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1330
Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1300
Charge press. hPa : 700
Del.quantity cm3/ : 94.5...96.5
1000H.: (92.5...98.5)
Dispersion cm3/ : 3.50
1000H.: (6.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 60...68

Testing:

1st c-rod trav.mm : 10.90
Speed 1/min : 1340...1350
2nd c-rod trav.mm : 4.00
Speed 1/min : 1435...1465
4th speed 1/min : 1600
C-rod trav.mm : 0.10...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 7...15

E28

Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 6.0

Testing:

Speed 1/min : 100
C-rod trav.mm min : 7.60
Speed 1/min : 300
C-rod trav.mm : 6.00...6.10
C-rod trav.mm : 2.00
Speed 1/min : 520...580

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : -
Contr.-rod trav.mm: 10.20...10.30

Measurement

Speed 1/min : 500
1st pressure hPa : 100
C-rod trav.mm : 0.40...0.50
2nd pressure hPa : 125
C-rod trav.mm : 0.90...1.10
3rd pressure hPa : 700
C-rod trav.mm : 11.90...12.00

SWITCH-OVER POINT

Speed 1/min : 230 (250)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 700
Speed 1/min : 800
Del.quantity cm3/ : 92.0...96.0
1000H.: (90.0...98.0)
Dispersion cm3/ : 5.00
1000H.: (7.00)
Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 54.5...56.5
1000H.: (52.5...58.5)
Dispersion cm3/ : 3.50
1000H.: 6.00

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 80.0...90.0
1000H.: (77.0...93.0)

LOW IDLE

Speed 1/min : 300
Contr.-rod trav.mm: 6.00...6.10
Del.quantity cm3/ : 10.5...14.5
1000H.: (8.0...17.0)
Dispersion cm3/ : 3.50
1000H.: (5.50)

Remarks:

Set intermediate-speed stop (ZDA) to
contact at 1300 1/min, then turn back
1/2 turn.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 6,0 D 30
Edition : 10.04.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 403 446 145
Injection pump
Pump designation : PES6MW100/72ORS1114
EP type number : 0 413 406 109
Governor
Governor design. : RQV300...1300MW48
Governor no. : 0 420 083 066

Customer-spec. information
Customer : DB

Engine : OM366A

1st version kW : 125.0
Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.70...3.80
: (3.65...3.85)
Contr.-rod trav.mm: 9.00...12.00

F02

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^cCS: 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1300

Contr.-rod trav.mm: 11.00...11.10

Del.quantity cm3/ : 7.7...7.9

100H.: (7.5...8.1)

Dispersion cm3/ : 0.35

100H.: (0.6)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 7.8...7.9

Del.quantity cm3/ : 0.9...1.3

100H.: (0.8...1.4)

Dispersion cm3/ : 0.35

100H.: (0.5)

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1330

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1300

Del.quantity cm3/ : 77.0...79.0

1000H.: (75.0...81.0)

Dispersion cm3/ : 3.50

1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 48...56

Testing:

1st c-rod trav.mm : 10.00

Speed 1/min : 1340...1350

2nd c-rod trav.mm : 4.00

Speed 1/min : 1430...1460

4th speed 1/min : 1520

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 14...22

Setting point w/out aux. spring

Speed 1/min : 300
Contr.-rod trav.mm: 7.85

Dispersion cm³/ : 3.50
1000H.: (5.00)

Testing:

Speed 1/min : 100
C-rod trav.mm min : 9.40
Speed 1/min : 300
C-rod trav.mm : 7.80...7.90
C-rod trav.mm : 2.00
Speed 1/min : 500...560

Remarks:

CONSTANT REGULATION

Speed 1/min : 330...600

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1300
C-rod trav.mm : 11.00...11.10
2nd speed 1/min : 700
C-rod trav.mm : 12.10...12.20
3rd speed 1/min : 720
C-rod trav.mm : 12.10...12.20
4th speed 1/min : 800
C-rod trav.mm : 11.80...12.00
5th speed 1/min : 900
C-rod trav.mm : 11.40...11.70

SWITCH-OVER POINT

Speed 1/min : 230 (250)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 700
Del.quantity cm³/ : 75.0...77.0
1000H.: (73.0...79.0)
Dispersion cm³/ : 5.00
1000H.: (7.00)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 10.00
Speed 1/min : 1340...1350

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm³/ : 72.0...80.0
1000H.: (69.0...83.0)
Contr.-rod trav.mm: 19.00...21.00

LOW IDLE

Speed 1/min : 300
Contr.-rod trav.mm: 7.80...7.90
Del.quantity cm³/ : 9.0...13.0
1000H.: (8.0...14.0)

F03

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 6,0 D 17
Edition : 24.07.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 403 446 156
Injection pump
Pump designation : PES6MW100/720RS1120
EP type number : 0 413 406 112
Governor
Governor design. : RQV300...1300MW59
Governor no. : 0 420 083 077

Customer-spec. information
Customer : MBB

Engine : OM 366 LA

1st version kW : 141.7

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.50...3.60
: (3.45...3.65)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1300

Contr.-rod trav.mm: 12.10...12.20

Del.quantity cm3/ : 8.9...9.1

100H.: (8.7...9.3)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 300.0
Contr.-rod trav. m: 6.0...6.1
Del.quantity cm3/ : 1.0...1.4
100H.: (0.7...1.6)
Dispersion cm3/ : 0.3
100H.: (0.5)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 1340
Sleeve travel mm: 8.50...8.60
2nd speed 1/min: 800
Sleeve travel mm: 4.40...4.80
3rd speed 1/min: 500
Sleeve travel mm: 2.70...3.30
4th speed 1/min: 300
Sleeve travel mm: 1.20...1.70

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1340
Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1300
Charge press. hPa : 700
Del.quantity cm3/ : 89.0...91.0
1000H.: (87.0...93.0)
Dispersion cm3/ : 3.50
1000H.: (6.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 48...56

Setting point:

Speed 1/min : 1340
Contr.-rod trav.mm: 16.5

Testing:

1st c-rod trav.mm : 11.10
Speed 1/min : 1340...1350
2nd c-rod trav.mm : 4.00
Speed 1/min : 1440...1470
3rd c-rod trav.mm : 4.00
4th speed 1/min : 1530
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 16...24
Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 6.0

Testing:

Speed 1/min : 100
C-rod trav.mm min : 8.00
Speed 1/min : 300
C-rod trav.mm : 6.00...6.10
C-rod trav.mm : 2.00

CONSTANT REGULATION

Speed 1/min : 320...550

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 700
Contr.-rod trav.mm: 12.00...12.10

Measurement

Speed 1/min : 500
C-rod trav.mm : 10.80...10.90
2nd pressure hPa : 260
C-rod trav.mm : 11.00...11.10
3rd pressure hPa : 310
C-rod trav.mm : 11.70...12.00

SWITCH-OVER POINT

Speed 1/min : 230 (250)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 700
Speed 1/min : 750
Del.quantity cm3/ : 82.0...86.0
1000H.: (79.5...88.5)

Dispersion cm3/ : 5.00
1000H.: (7.00)
Speed 1/min : 500
Del.quantity cm3/ : 53.0...55.0
1000H.: (51.0...57.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 11.10
Speed 1/min : 1340...1350

MIDDLE RATED SPEED
Contr.-rod trav.mm: 4.00

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 85.0...95.0
1000H.: (82.0...98.0)

LOW IDLE

Speed 1/min : 300
Contr.-rod trav.mm: 6.00...6.10
Del.quantity cm3/ : 10.0...14.0
1000H.: (7.5...16.5)
Dispersion cm3/ : 3.50
1000H.: (5.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 6,1 N8
Edition : 14.8.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 9 403 446 166

Injection pump
Pump designation : PES6MW100/72ORS1133
EP type number : 0 413 406 126
Governor
Governor design. : RQ325...1325MW65
Governor no. : 0 420 082 018

Customer-spec. information
Customer : KHD

Engine : BF 6L 913 BW

1st version kW : 124.0
Speed 1/min: 2650

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.5

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6,00x2,00x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3,50...3,60
: (3,45...3,65)

Contr.-rod trav.mm: 9,00...12,00

Cam sequence : 1-5-3-6-2-4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0,50 (0,75)

BASIC SETTING

1st speed 1/mi: 1325

Contr.-rod trav.mm: 11,00...11,10

Del.quantity cm3/ : 10,1...10,3

100H.: (9,9...10,5)

Dispersion cm3/ : 0,3

100H.: (0,6)

2nd speed 1/min: 325
Contr.-rod trav. m: 7,00...7,10
Del.quantity cm3/ : 1,1...1,5
100H.: (0,9...1,7)
Dispersion cm3/ : 0,3
100H.: (0,5)

SLEEVE POSITION

Control-lever position
Degree: -2
Speed 1/min: 700
Contr.-rod travelmm: 19,20...20,80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1325
Charge press. hPa : 700
Del.quantity cm3/ : 101,0...103,0
1000H.: (99,0...105,0)
Dispersion cm3/ : 3,50
1000H.: (6,00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 26...34

Setting point:
Speed 1/min : 700
Contr.-rod trav.mm: 20,0

Testing:
1st c-rod trav.mm : 10,00
Speed 1/min : 1375...1385
2nd c-rod trav.mm : 4,00
Speed 1/min : 1445...1475
4th speed 1/min : 1550
C-rod trav.mm : 0,10...1,00

F08

LOWEST RATED SPEED I

Control-lever
position degrees: 8...16
Setting point w/out aux. spring
Speed 1/min : 8,60
Contr.-rod trav.mm: 325

Testing:

Speed 1/min : 100
C-rod trav.mm min : 8,60
Speed 1/min : 325
C-rod trav.mm : 7,00...7,10

CONSTANT REGULATION

Speed 1/min : 340...450

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 700
Contr.-rod trav.mm: 11,00...11,10

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 9,50...9,60
2nd pressure hPa : 350
C-rod trav.mm : 10,10...10,40
3rd pressure hPa : 450
C-rod trav.mm : 10,70...10,80

FUEL-DELIVERY CHARACTERISTICS

1st version
Charge press. hPa : 700
Speed 1/min : 850
Del.quantity cm3/ : 93,0...97,0
1000H.: (91,0...99,0)
Dispersion cm3/ : 3,50
1000H.: (7,00)
Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 57,0...59,0
1000H.: (55,0...61,0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 120,0...140,0
1000H.: (117,0...143,0)

LOW IDLE

Speed 1/min : 325
Contr.-rod trav.mm: 7,00...7,10
Del.quantity cm3/ : 11,0...15,0
1000H.: (9,0...17,0)
Dispersion cm3/ : 3,50
1000H.: (5,00)

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 6,0 D 26
 Edition : 10.08.87
 Superceeded : 13.05.87
 Calibrating oil : ISO-4113
 Combination no. : 0 403 446 177
 Injection pump
 Pump designation : PES6MW100/72ORS1144
 EP type number : 0 413 406 138
 Governor
 Governor design. : R&V300...1300MW48
 Governer no. : 0 420 083 066

Customer-spec. information
 Customer : DB

Engine : OM366A

1st version kW : 125.0
 Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.70...3.80
 : (3.65...3.85)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing⁰CS: 0-60-120-180-240-300
 Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1300

Contr.-rod trav.mm: 11.00...11.10

Del.quantity cm3/ : 8.2...8.4

100H.: (8.0...8.6)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 7.8...7.9

Del.quantity cm3/ : 1.0...1.4

100H.: (0.9...1.5)

Dispersion cm3/ : 0.3

100H.: (0.5)

(B) Setting of injection pump with
 externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 1340

Sleeve travel mm: 8.50...8.70

2nd speed 1/min: 1450

Sleeve travel mm: 9.30...9.70

3rd speed 1/min: 500

Sleeve travel mm: 2.70...3.30

4th speed 1/min: 300

Sleeve travel mm: 1.20...1.70

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1350

Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1300

Del.quantity cm3/ : 82.0...84.0

1000H.: (80.0...86.0)

Dispersion cm3/ : 3.50

1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 50...58

Testing:
1st c-rod trav.mm : 10.00
Speed 1/min : 1340...1350
2nd c-rod trav.mm : 4.00
Speed 1/min : 1425...1455
4th speed 1/min : 1550
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 18...26
Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 7.8

Testing:
Speed 1/min : 100
C-rod trav.mm min : 8.70
Speed 1/min : 300
C-rod trav.mm : 7.80...7.90

CONSTANT REGULATION

Speed 1/min : 330...500

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1300
C-rod trav.mm : 11.00...11.10
2nd speed 1/min : 800
C-rod trav.mm : 11.80...12.00
3rd speed 1/min : 585
C-rod trav.mm : 12.00...12.20
4th speed 1/min : 1100
C-rod trav.mm : 11.00...11.10

SWITCH-OVER POINT

Speed 1/min : 230 (250)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 800
Del.quantity cm3/ : 81.0...83.0
1000H.: (79.0...85.0)
Dispersion cm3/ : 5.00
1000H.: (7.00)
Speed 1/min : 585
Del.quantity cm3/ : 77.5...80.5
1000H.: (75.0...83.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 10.00
Speed 1/min : 1340...1350

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 80.0...90.0
1000H.: (77.0...93.0)

LOW IDLE

Speed 1/min : 300
Contr.-rod trav.mm: 7.80...7.90
Del.quantity cm3/ : 10.0...14.0
1000H.: (9.0...15.0)
Dispersion cm3/ : 3.50
1000H.: (5.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : IHC 7,6 R14
Edition : 31.07.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 403 446 183

Injection pump
Pump designation : PES6MW100/32ORS1112
EP type number : 0 413 406 108
Governor
Governor design. : RQV350...1300MW46-11
Governor no. : 0 420 083 120

Customer-spec. information
Customer : NAVISTAR

Engine : DT-466 C

1st version kW : 154.5
Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 2 417 413 037

Inlet press., bar : 2.80

Calibrating nozzle-holder
assembly : 1 688 901 016

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.5

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values _____

START OF DELIVERY
Test pressure, bar: 30...32

Prestroke mm : 3.95...4.05
 : (3.90...4.10)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 900

Contr.-rod trav.mm: 11.00...11.10

Del.quantity cm3/ : 10.6...10.8

100H.: (10.4...11.0)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 350.0
Contr.-rod trav. m: 5.7...5.8
Del.quantity cm3/ : 1.6...2.0
100H.: (1.3...2.2)
Dispersion cm3/ : 0.3
100H.: (0.5)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 1350
Sleeve travel mm: 8.30...8.50
2nd speed 1/min: 1460
Sleeve travel mm: 9.10...9.50
3rd speed 1/min: 550
Sleeve travel mm: 3.10...3.70
4th speed 1/min: 350
Sleeve travel mm: 1.30...1.70

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1380
Contr.-rod travelmm: 6.60...9.40

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 900
Charge press. hPa : 700
Del.quantity cm3/ : 106.5...108.5
1000H.: (104.5...110.5)
Dispersion cm3/ : 3.50
1000H.: (6.00)

HIGHEST RATED SPEED
1st version
Control-lever
position degrees: 45...50

Testing:
1st c-rod trav.mm : 10.00
Speed 1/min : 1345...1365
2nd c-rod trav.mm : 4.00
Speed 1/min : 1455...1465
4th speed 1/min : 1500
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I
Control-lever
position degrees: 10...18
Setting point w/out aux. spring
Speed 1/min : 350
Contr.-rod trav.mm: 5.7

Testing:
Speed 1/min : 100
C-rod trav.mm min : 9.00
Speed 1/min : 350
C-rod trav.mm : 5.70...5.80

CONSTANT REGULATION
Speed 1/min : 300...450

compensator (LDA,ADA,ALDA)

1st version
Setting
Speed 1/min : 500
Pressure hPa : 170
Contr.-rod trav.mm: 10.20...10.30

Measurement
Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 9.90...10.00
2nd pressure hPa : 315
C-rod trav.mm : 10.60...10.90
3rd pressure hPa : 700
C-rod trav.mm : 11.00...11.10

SWITCH-OVER POINT

Speed 1/min : 220 (210)

FUEL-DELIVERY CHARACTERISTICS

1st version
Charge press. hPa : 700
Speed 1/min : 1300
Del.quantity cm3/ : 108.0...112.0
1000H.: (106.0...114.0)

Dispersion cm3/ : 6.50
1000H.: (7.00)
Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 81.5...83.5
1000H.: (79.5...85.5)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 10.00
Speed 1/min : 1345...1365

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 140.0...180.0
1000H.: (137.0...183.0)
Contr.-rod trav.mm: 19.00...21.00

LOW IDLE

Speed 1/min : 350
Contr.-rod trav.mm: 5.70...5.80
Del.quantity cm3/ : 16.0...20.0
1000H.: (13.5...22.5)
Dispersion cm3/ : 3.50
1000H.: (5.50)

Remarks:
Perform pump setting only with IH hose
with restriction of 1.2 mm diameter.

In unlatched condition, do not
operate greater than $n = 500$ 1/min

Set low idle at stop screw.

Set shutoff stop 1.5...2.0 mm before
shutoff.

Before checking sleeve position,
first adjust latching.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : IHC 7,6 R15
Edition : 31.07.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 403 446 185

Injection pump
Pump designation : PES6MW100/32ORS1140
EP type number : 0 413 406 135
Governor
Governor design. : RQV350...1200MW72-1
Governor no. : 0 420 083 122

Customer-spec. information
Customer : NAVISTAR

Engine : DT-466 C

1st version kW : 134.0
Speed 1/min: 2400

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 2 417 413 037

Inlet press., bar : 2.80

Calibrating nozzle-holder
assembly : 1 688 901 016

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.5

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.95...4.05
 : (3.90...4.10)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 800

Contr.-rod trav.mm: 11.40...11.50

Del.quantity cm3/ : 9.1...9.3

100H.: (8.9...9.5)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 350.0
Contr.-rod trav. m: 6.6...6.7
Del.quantity cm3/ : 1.6...2.0
100H.: (1.3...2.2)
Dispersion cm3/ : 0.3
100H.: (0.5)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 1250
Sleeve travel mm: 7.80...8.00
2nd speed 1/min: 1340
Sleeve travel mm: 8.80...9.20
3rd speed 1/min: 500
Sleeve travel mm: 2.60...3.20
4th speed 1/min: 350
Sleeve travel mm: 1.30...1.80

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1380
Contr.-rod travelmm: 6.70...9.30

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 800
Del.quantity cm3/ : 91.5...93.5
1000H.: (89.5...95.5)
Dispersion cm3/ : 3.50
1000H.: (6.00)

HIGHEST RATED SPEED

F16

1st version
Control-lever
position degrees: 42...47

Testing:

1st c-rod trav.mm : 10.40
Speed 1/min : 1250...1270
2nd c-rod trav.mm : 4.00
Speed 1/min : 1360...1370
4th speed 1/min : 1450
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 10...18
Setting point w/out aux. spring
Speed 1/min : 350
Contr.-rod trav.mm: 6.6

Testing:

Speed 1/min : 100
C-rod trav.mm min : 9.00
Speed 1/min : 350
C-rod trav.mm : 6.60...6.70

CONSTANT REGULATION

Speed 1/min : 370...500

SWITCH-OVER POINT

Speed 1/min : 280 (290)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 1200
Del.quantity cm3/ : 94.0...98.0
1000H.: (92.0...100.0)
Dispersion cm3/ : 6.50
1000H.: (7.00)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 10.40
Speed 1/min : 1250...1270

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 140.0...180.0
1000H.: (137.0...183.0)
Contr.-rod trav.mm: 19.00...21.00

LOW IDLE

Speed 1/min : 350
Contr.-rod trav.mm: 6.60...6.70

Del. quantity cm³/ : 16.0...20.0
1000H.: (13.5...22.5)
Dispersion cm³/ : 3.50
1000H.: (5.50)

Perform pump setting only with IH hose
with restriction of 1.2 mm diameter.

Before checking sleeve position,
first adjust latching.

In unlatched condition, do not
operate greater than $n = 500$ 1/min

Set low idle at stop screw.

Set shutoff stop 1.5...2.0 mm before
shutoff.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 6,0 D 21
Edition : 10.08.87
Superceeded : 09.03.87
Calibrating oil : ISO-4113

Combination no. : 0 403 446 187

Injection pump
Pump designation : PES6MW100/72ORS1129
EP type number : 0 413 406 121
Governor
Governor design. : RQV300...1300MW50-2
Governor no. : 0 420 083 124

Customer-spec. information
Customer : DB

Engine : OM 366 LA

1st version kW : 150.0
Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 30...32

Prestroke mm : 3.70...3.80
 : (3.65...3.85)
Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1300

Contr.-rod trav.mm: 11.20...11.30

Del.quantity cm3/ : 9.3...9.5

100H.: (9.1...9.7)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 5.5...5.6

Del.quantity cm3/ : 1.0...1.2

100H.: (0.8...1.6)

Dispersion cm3/ : 0.3

100H.: (0.5)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 1340

Sleeve travel mm: 8.60...8.80

2nd speed 1/min: 1430

Sleeve travel mm: 9.30...9.70

3rd speed 1/min: 300

Sleeve travel mm: 1.20...1.60

4th speed 1/min: 700

Sleeve travel mm: 3.80...4.40

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1340

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1300

Charge press. hPa : 700

Del.quantity cm3/ : 93.0...95.0

1000H.: (91.0...97.0)

Dispersion cm3/ : 3.50

1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Control-lever
position degrees: 51...59

Testing:
1st c-rod trav.mm : 10.20
Speed 1/min : 1340...1350
2nd c-rod trav.mm : 4.00
Speed 1/min : 1430...1460
4th speed 1/min : 1550
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I
Control-lever
position degrees: 15...23
Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 5.5

Testing:
Speed 1/min : 100
C-rod trav.mm min : 7.50
Speed 1/min : 300
C-rod trav.mm : 5.50...5.60

SET IDLE AUXILIARY SPRING
Contr.-rod trav.mm: 2.00

CONSTANT REGULATION
Speed 1/min : 320...530

compensator (LDA,ADA,ALDA)

1st version
Setting
Speed 1/min : 500
Pressure hPa : 400
Contr.-rod trav.mm: 9.90...10.0

Measurement
Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 9.50...9.60
2nd pressure hPa : 500
C-rod trav.mm : 10.80...11.10
3rd pressure hPa : 700
C-rod trav.mm : 11.20...11.30

SWITCH-OVER POINT

Speed 1/min : 220 (230)

FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 53.0...55.0
1000H.: (51.0...57.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 10.20
Speed 1/min : 1340...1350

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 90.0...100.0
1000H.: (87.0...103.0)

LOW IDLE

Speed 1/min : 300
Contr.-rod trav.mm: 5.50...5.60
Del.quantity cm3/ : 10.0...12.0
1000H.: (8.0...16.0)
Dispersion cm3/ : 3.50
1000H.: (5.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : IHC 7,6 R22
Edition : 10.08.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 403 446 192
Injection pump
Pump designation : PES6MW100/32ORS1112
EP type number : 0 413 406 108
Governor
Governor design. : RQV350...1300MW72-2
Governor no. : 0 420 083 141

Customer-spec. information
Customer : NAVISTAR

Engine : DT-466

1st version kW : 136.0
Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 2 417 413 037

Inlet press., bar : 2.80

Calibrating nozzle-holder
assembly : 1 688 901 016

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.5

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.95...4.05
 : (3.90...4.10)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 900

Contr.-rod trav.mm: 10.30...10.40

Del.quantity cm3/ : 8.9...9.1

100H.: (8.7...9.3)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 350.0
Contr.-rod trav. m: 6.1...6.2
Del.quantity cm3/ : 1.6...2.0
100H.: (1.3...2.2)
Dispersion cm3/ : 0.3
100H.: (0.5)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 1350
Sleeve travel mm: 8.30...8.50
2nd speed 1/min: 1460
Sleeve travel mm: 9.10...9.50
3rd speed 1/min: 550
Sleeve travel mm: 3.10...3.70
4th speed 1/min: 350
Sleeve travel mm: 1.30...1.70

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1380
Contr.-rod travelmm: 6.60...9.40

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 900
Del.quantity cm3/ : 89.5...91.5
1000H.: (87.5...93.5)
Dispersion cm3/ : 3.50
1000H.: (6.00)

HIGHEST RATED SPEED

F21

1st version
Control-lever
position degrees: 44...49

Testing:

1st c-rod trav.mm : 9.40
Speed 1/min : 1360...1380
2nd c-rod trav.mm : 4.00
Speed 1/min : 1460...1470
4th speed 1/min : 1500
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 10...18
Setting point w/out aux. spring
Speed 1/min : 350
Contr.-rod trav.mm: 6.1

Testing:

Speed 1/min : 100
C-rod trav.mm min : 9.00
Speed 1/min : 350
C-rod trav.mm : 6.10...6.20

CONSTANT REGULATION

Speed 1/min : 300...450

SWITCH-OVER POINT

Speed 1/min : 220 (210)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 1300
Del.quantity cm3/ : 91.5...95.5
1000H.: (89.5...97.5)
Dispersion cm3/ : 6.50
1000H.: (7.00)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 9.40
Speed 1/min : 1360...1380

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 140.0...180.0
1000H.: (137.0...183.0)
Contr.-rod trav.mm: 19.00...21.00

LOW IDLE

Speed 1/min : 350
Contr.-rod trav.mm: 6.10...6.20

Del. quantity cm³/ : 16.0...20.0
1000H.: (13.5...22.5)
Dispersion cm³/ : 3.50
1000H.: (5.50)

Perform pump setting only with IH hose
with restriction of 1.2 mm diameter.

Before checking sleeve position,
first adjust latching.

In unlatched condition, do not
operate greater than $n = 500$ 1/min

Set low idle at stop screw.

Set shutoff stop 1.5...2.0 mm before
shutoff.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : IHC 7,6 S
 Edition : 10.08.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 403 446 193
 Injection pump
 Pump designation : PES6MW100/32ORS1159
 EP type number : 0 413 406 146
 Governor
 Governor design. : RQV350...1300MW72-3
 Governor no. : 0 420 083 142

Customer-spec. information
 Customer : NAVISTAR

Engine : DT-466

1st version kW : 136.0
 Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 2 417 413 037

Inlet press., bar : 2.80

Calibrating nozzle-holder
 assembly : 1 688 901 016

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0.5

Test inj. tubing : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.95...4.05
 : (3.90...4.10)
 Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
 Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 900

Contr.-rod trav.mm: 11.00...11.10

Del.quantity cm3/ : 9.5...9.7

100H.: (9.3...9.9)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 6.4...6.5

Del.quantity cm3/ : 1.6...2.0

100H.: (1.3...2.2)

Dispersion cm3/ : 0.3

100H.: (0.5)

(B) Setting of injection pump with
 externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 1250

Sleeve travel mm: 7.80...8.00

2nd speed 1/min: 1340

Sleeve travel mm: 8.80...9.20

3rd speed 1/min: 500

Sleeve travel mm: 2.60...3.20

4th speed 1/min: 350

Sleeve travel mm: 1.30...1.80

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1380

Contr.-rod travelmm: 6.70...9.30

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 900

Del.quantity cm3/ : 95.0...97.0

1000H.: (93.0...99.0)

Dispersion cm3/ : 3.50

1000H.: (6.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 46...51

Testing:

1st c-rod trav.mm : 10.00
Speed 1/min : 1370...1390
2nd c-rod trav.mm : 4.00
Speed 1/min : 1475...1485
4th speed 1/min : 1450
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 11...19
Setting point w/out aux. spring
Speed 1/min : 350
Contr.-rod trav.mm: 6.4

Testing:

Speed 1/min : 100
C-rod trav.mm min : 9.00
Speed 1/min : 350
C-rod trav.mm : 6.40...6.50

CONSTANT REGULATION

Speed 1/min : 370...500

SWITCH-OVER POINT

Speed 1/min : 280 (290)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 1200
Del.quantity cm3/ : 99.5...103.5
1000H.: (97.5...105.5)
Dispersion cm3/ : 6.50
1000H.: (7.00)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 10.00
Speed 1/min : 1370...1390

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 140.0...180.0
1000H.: (137.0...183.0)
Contr.-rod trav.mm: 19.00...21.00

LOW IDLE

Speed 1/min : 350
Contr.-rod trav.mm: 6.40...6.50

Del.quantity cm3/ : 16.0...20.0
1000H.: (13.5...22.5)
Dispersion cm3/ : 3.50
1000H.: (5.50)

Perform pump setting only with IH hose
with restriction of 1.2 mm diameter.

Before checking sleeve position,
first adjust latching.

In unlatched condition, do not
operate greater than $n = 500$ 1/min

Set low idle at stop screw.

Set shutoff stop 1.5...2.0 mm before
shutoff.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : IHC 7,6 R20
Edition : 31.07.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 403 446 194
Injection pump
Pump designation : PES6MW100/320RS1112
EP type number : 0 413 406 108
Governor
Governor design. : RQV350...1300MW46-12
Governor no. : 0 420 083 143

Customer-spec. information
Customer : NAVISTAR

Engine : DT-466

1st version kW : 154.5
Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 2 417 413 037

Inlet press., bar : 2.80

Calibrating nozzle-holder
assembly : 1 688 901 016

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.5

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 30...32

Prestroke mm : 3.95...4.05
 : (3.90...4.10)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 900
Contr.-rod trav.mm: 10.80...10.90
Del.quantity cm3/ : 10.3...10.5
 100H.: (10.1...10.7)
Dispersion cm3/ : 0.3
 100H.: (0.6)

2nd speed 1/min: 350.0
Contr.-rod trav. m: 5.5...5.6
Del.quantity cm3/ : 1.6...2.0
 100H.: (1.3...2.2)
Dispersion cm3/ : 0.3
 100H.: (0.5)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 1350
Sleeve travel mm: 8.30...8.50
2nd speed 1/min: 1460
Sleeve travel mm: 9.10...9.50
3rd speed 1/min: 550
Sleeve travel mm: 3.10...3.70
4th speed 1/min: 350
Sleeve travel mm: 1.30...1.70

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1380
Contr.-rod travelmm: 6.60...9.20

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 900
Charge press. hPa : 800
Del.quantity cm3/ : 103.0...105.0
 1000H.: (101.0...107.0)
Dispersion cm3/ : 3.50
 1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 43...48

Testing:

1st c-rod trav.mm : 9.80

Speed 1/min : 1350...1370

2nd c-rod trav.mm : 4.00

Speed 1/min : 1455...1465

4th speed 1/min : 1500

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 7...15

Setting point w/out aux. spring

Speed 1/min : 350

Contr.-rod trav.mm: 5.5

Testing:

Speed 1/min : 100

C-rod trav.mm min : 9.00

Speed 1/min : 350

C-rod trav.mm : 5.50...5.60

CONSTANT REGULATION

Speed 1/min : 360...450

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 170

Contr.-rod trav.mm: 10.30...10.40

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 10.10...10.20

2nd pressure hPa : 230

C-rod trav.mm : 10.60...10.80

3rd pressure hPa : 800

C-rod trav.mm : 10.80...10.90

SWITCH-OVER POINT

Speed 1/min : 280 (290)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 800

Speed 1/min : 1300

Del.quantity cm3/ : 103.0...107.0

1000H.: (101.0...109.0)

Dispersion cm3/ : 6.50

1000H.: (7.00)

Charge press. hPa : -

Speed 1/min : 500

Del.quantity cm3/ : 87.0...89.0

1000H.: (85.0...91.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 9.80

Speed 1/min : 1350...1370

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 140.0...180.0

1000H.: (137.0...183.0)

Contr.-rod trav.mm: 19.00...21.00

LOW IDLE

Speed 1/min : 350

Contr.-rod trav.mm: 5.50...5.60

Del.quantity cm3/ : 16.0...20.0

1000H.: (13.5...22.5)

Dispersion cm3/ : 3.50

1000H.: (5.50)

Remarks:

Perform pump setting only with IH hose
with restriction of 1.2 mm diameter.

Before checking sleeve position,
first adjust latching.

In unlatched condition, do not
operate greater than $n = 500$ 1/min

Set low idle at stop screw.

Set shutoff stop 1.5...2.0 mm before
shutoff.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : IHC 7,6 R21
Edition : 31.07.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 403 446 195

Injection pump
Pump designation : PES6MW100/320RS1112
EP type number : 0 413 406 108
Governor
Governor design. : RQV350...1200MW46-13
Governor no. : 0 420 083 144

Customer-spec. information
Customer : NAVISTAR

Engine : DTA-466

1st version kW : 180.0
Speed 1/min: 2400

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 2 417 413 037

Inlet press., bar : 2.80

Calibrating nozzle-holder
assembly : 1 688 901 016

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.5

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 30...32

Prestroke mm : 3.95...4.05
 : (3.90...4.10)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing⁰CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 800

Contr.-rod trav.mm: 12.30...12.40

Del.quantity cm3/ : 11.7...11.9

100H.: (11.5...12.1)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 350.0
Contr.-rod trav. m: 6.3...6.4
Del.quantity cm3/ : 1.6...2.0
100H.: (1.3...2.2)
Dispersion cm3/ : 0.3
100H.: (0.5)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 1350
Sleeve travel mm: 8.30...8.50
2nd speed 1/min: 1460
Sleeve travel mm: 9.10...9.50
3rd speed 1/min: 550
Sleeve travel mm: 3.10...3.70
4th speed 1/min: 350
Sleeve travel mm: 1.30...1.70

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1380
Contr.-rod travelmm: 6.70...9.30

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 800
Charge press. hPa : 800
Del.quantity cm3/ : 117.5...119.5
1000H.: (115.5...121.5)
Dispersion cm3/ : 3.50
1000H.: (6.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 43...48

Testing:

1st c-rod trav.mm : 11.40
Speed 1/min : 1240...1260
2nd c-rod trav.mm : 4.00
Speed 1/min : 1370...1380
4th speed 1/min : 1500
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 9...17
Setting point w/out aux. spring
Speed 1/min : 350
Contr.-rod trav.mm: 6.3

Testing:

Speed 1/min : 100
C-rod trav.mm min : 9.00
Speed 1/min : 350
C-rod trav.mm : 6.30...6.40

CONSTANT REGULATION

Speed 1/min : 360...450
compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 190
Contr.-rod trav.mm: 11.00...11.10

Measurement

Speed 1/min : 500
1st pressure hPa : -
C-rod trav.mm : 10.60...10.70
2nd pressure hPa : 360
C-rod trav.mm : 11.70...12.00
3rd pressure hPa : 800
C-rod trav.mm : 12.30...12.40

SWITCH-OVER POINT

Speed 1/min : 280 (290)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 800
Speed 1/min : 1200
Del.quantity cm3/ : 122.5...126.5
1000H.: (120.5...128.5)

Dispersion cm³/ : 6.50
1000H.: (7.00)
Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm³/ : 90.5...92.5
1000H.: (88.5...94.5)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 11.40
Speed 1/min : 1240...1260

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm³/ : 140.0...180.0
1000H.: (137.0...183.0)
Contr.-rod trav.mm: 19.00...21.00

LOW IDLE

Speed 1/min : 350
Contr.-rod trav.mm: 6.30...6.40
Del.quantity cm³/ : 16.0...20.0
1000H.: (13.5...22.5)
Dispersion cm³/ : 3.50
1000H.: (5.50)

Remarks:
Perform pump setting only with IH hose
with restriction of 1.2 mm diameter.

Before checking sleeve position,
first adjust latching.

In unlatched condition, do not
operate greater than $n = 500$ 1/min

Set low idle at stop screw.

Set shutoff stop 1.5...2.0 mm before
shutoff.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : IHC 7,6 R23
Edition : 10.08.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 403 446 196

Injection pump
Pump designation : PES6MW100/32ORS1112
EP type number : 0 413 406 108
Governor
Governor design. : RQV350...1200MW46-14
Governor no. : 0 420 083 145

Customer-spec. information
Customer : NAVISTAR

Engine : DTA-466

1st version kW : 169.0
Speed 1/min: 2400

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 2 417 413 037

Inlet press., bar : 2.80

Calibrating nozzle-holder
assembly : 1 688 901 016

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.5

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.95...4.05
 : (3.90...4.10)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 800

Contr.-rod trav.mm: 11.70...11.80

Del.quantity cm3/ : 10.8...11.0

100H.: (10.6...11.2)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 350.0
Contr.-rod trav. m: 6.2...6.3
Del.quantity cm3/ : 1.6...2.0
100H.: (1.3...2.2)
Dispersion cm3/ : 0.3
100H.: (0.5)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 1350
Sleeve travel mm: 8.30...8.50
2nd speed 1/min: 1460
Sleeve travel mm: 9.10...9.50
3rd speed 1/min: 550
Sleeve travel mm: 3.10...3.70
4th speed 1/min: 350
Sleeve travel mm: 1.30...1.70

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1380
Contr.-rod travelmm: 6.70...9.30

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 800
Charge press. hPa : 800
Del.quantity cm3/ : 108.0...110.0
1000H.: (106.0...112.0)
Dispersion cm3/ : 3.50
1000H.: (6.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 44...49

Testing:

1st c-rod trav.mm : 10.70
Speed 1/min : 1250...1270
2nd c-rod trav.mm : 4.00
Speed 1/min : 1365...1375
4th speed 1/min : 1460
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 12...20
Setting point w/out aux. spring
Speed 1/min : 350
Contr.-rod trav.mm: 6.2

Testing:

Speed 1/min : 100
C-rod trav.mm min : 9.00
Speed 1/min : 350
C-rod trav.mm : 6.2...6.3

CONSTANT REGULATION

Speed 1/min : 360...450
compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 180
Contr.-rod trav.mm: 11.00...11.10

Measurement

Speed 1/min : 500
1st pressure hPa : -
C-rod trav.mm : 10.70...10.80
2nd pressure hPa : 270
C-rod trav.mm : 11.30...11.40
3rd pressure hPa : 800
C-rod trav.mm : 11.70...11.80

SWITCH-OVER POINT

Speed 1/min : 280 (290)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 800
Speed 1/min : 1200
Del.quantity cm3/ : 112.5...116.5
1000H.: (110.5...118.5)

Dispersion cm³/ : 6.50
1000H.: (7.00)
Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm³/ : 87.0...89.0
1000H.: (85.0...91.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 10.70
Speed 1/min : 1250...1270

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm³/ : 140.0...180.0
1000H.: (137.0...183.0)
Contr.-rod trav.mm: 19.00...21.00

LOW IDLE

Speed 1/min : 350
Contr.-rod trav.mm: 6.20...6.30
Del.quantity cm³/ : 16.0...20.0
1000H.: (13.5...22.5)
Dispersion cm³/ : 3.50
1000H.: (5.50)

Remarks:
Perform pump setting only with IH hose
with restriction of 1.2 mm diameter.

Before checking sleeve position,
first adjust latching.

In unlatched condition, do not
operate greater than $n = 500$ 1/min

Set low idle at stop screw.

Set shutoff stop 1.5...2.0 mm before
shutoff.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : IHC 7,6 R24
 Edition : 10.08.87
 Superseded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 403 446 197
 Injection pump
 Pump designation : PES6MW100/32ORS1112
 EP type number : 0 413 406 108
 Governor
 Governor design. : RQV350...1200MW46-15
 Governor no. : 0 420 083 146

Customer-spec. information
 Customer : NAVISTAR

Engine : DTA-466

1st version kW : 158.0
 Speed 1/min: 2400

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 2 417 413 037

Inlet press., bar : 2.80

Calibrating nozzle-holder
 assembly : 1 686 901 016

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0.5

Test inj. tubing : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY
 Test pressure, bar: 30...32

Prestroke mm : 3.95...4.05
 : (3.90...4.10)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 800

Contr.-rod trav.mm: 11.00...11.10

Del.quantity cm3/ : 9.9...10.1

100H.: (9.7...10.3)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 350.0
Contr.-rod trav. m: 6.2...6.3
Del.quantity cm3/ : 1.6...2.0
100H.: (1.3...2.2)
Dispersion cm3/ : 0.3
100H.: (0.5)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 1350
Sleeve travel mm: 8.30...8.50
2nd speed 1/min: 1460
Sleeve travel mm: 9.10...9.50
3rd speed 1/min: 550
Sleeve travel mm: 3.10...3.70
4th speed 1/min: 350
Sleeve travel mm: 1.30...1.70

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1380
Contr.-rod travelmm: 6.70...9.30

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 800
Charge press. hPa : 800
Del.quantity cm3/ : 99.0...101.0
1000H.: (97.0...103.0)
Dispersion cm3/ : 3.50
1000H.: (6.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 43...48

Testing:

1st c-rod trav.mm : 10.00
Speed 1/min : 1250...1270
2nd c-rod trav.mm : 4.00
Speed 1/min : 1355...1365
4th speed 1/min : 1500
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 10...18
Setting point w/out aux. spring
Speed 1/min : 350
Contr.-rod trav.mm: 6.2

Testing:

Speed 1/min : 100
C-rod trav.mm min : 9.00
Speed 1/min : 350
C-rod trav.mm : 6.20...6.30

CONSTANT REGULATION

Speed 1/min : 360...450
compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 200
Contr.-rod trav.mm: 10.70...10.80

Measurement

Speed 1/min : 500
1st pressure hPa : -
C-rod trav.mm : 10.40...10.50
3rd pressure hPa : 800
C-rod trav.mm : 11.00...11.10

SWITCH-OVER POINT

Speed 1/min : 280 (290)

FUEL-DELIVERY CHARACTERISTICS

1st version
Charge press. hPa : 800
Speed 1/min : 1200
Del.quantity cm3/ : 102.5...106.5
1000H.: (100.5...108.5)
Dispersion cm3/ : 6.50
1000H.: (7.00)

Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm³/ : 84.0...86.0
1000H.: (82.0...88.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 10.00
Speed 1/min : 1250...1270

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm³/ : 140.0...180.0
1000H.: (137.0...183.0)
Contr.-rod trav.mm: 19.00...21.00

LOW IDLE

Speed 1/min : 350
Contr.-rod trav.mm: 6.20...6.30
Del.quantity cm³/ : 16.0...20.0
1000H.: (13.5...22.5)
Dispersion cm³/ : 3.50
1000H.: (5.50)

Remarks:
Perform pump setting only with IH hose
with restriction of 1.2 mm diameter.

Before checking sleeve position,
first adjust latching.

In unlatched condition, do not
operate greater than $n = 500$ 1/min

Set low idle at stop screw.

Set shutoff stop 1.5...2.0 mm before
shutoff.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : IHC 7,6 T
Edition : 10.08.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 403 446 198

Injection pump
Pump designation : PES6MW100/32ORS1160
EP type number : 0 413 406 147
Governor
Governor design. : RQV350...1200MW46-16
Governor no. : 0 420 083 147

Customer-spec. information
Customer : NAVISTAR

Engine : DTA-466

1st version kW : 176.4
Speed 1/min: 2400

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 2 417 413 037

Inlet press., bar : 2.80

Calibrating nozzle-holder
assembly : 1 688 901 016

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.5

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 30...32

Prestroke mm : 3.95...4.05
 : (3.90...4.10)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 800

Contr.-rod trav.mm: 12.60...12.70

Del.quantity cm3/ : 12.2...12.4

100H.: (12.0...12.6)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 350.0
Contr.-rod trav. m: 6.5...6.6
Del.quantity cm3/ : 1.6...2.0
100H.: (1.3...2.2)
Dispersion cm3/ : 0.3
100H.: (0.5)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 1350
Sleeve travel mm: 8.30...8.50
2nd speed 1/min: 1460
Sleeve travel mm: 9.10...9.50
3rd speed 1/min: 550
Sleeve travel mm: 3.10...3.70
4th speed 1/min: 350
Sleeve travel mm: 1.30...1.70

SLEEVE POSITION

Control-lever position
Degree: ~1
Speed 1/min: 1380
Contr.-rod travelmm: 6.60...9.40

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 800
Charge press. hPa : 800
Del.quantity cm3/ : 122.0...124.0
1000H.: (120.0...126.0)
Dispersion cm3/ : 3.50
1000H.: (6.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 44...49

Testing:

1st c-rod trav.mm : 11.60
Speed 1/min : 1260...1280
2nd c-rod trav.mm : 4.00
Speed 1/min : 1385...1395
4th speed 1/min : 1500
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 12...20
Setting point w/out aux. spring
Speed 1/min : 350
Contr.-rod trav.mm: 6.5

Testing:

Speed 1/min : 100
C-rod trav.mm min : 9.00
Speed 1/min : 350
C-rod trav.mm : 6.50...6.60

CONSTANT REGULATION

Speed 1/min : 300...450
compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 800
Pressure hPa : 180
Contr.-rod trav.mm: 10.60...10.70

Measurement

Speed 1/min : 800
1st pressure hPa : -
C-rod trav.mm : 10.30...10.40
2nd pressure hPa : 480
C-rod trav.mm : 12.10...12.40
3rd pressure hPa : 800
C-rod trav.mm : 12.60...12.70

SWITCH-OVER POINT

Speed 1/min : 280 (290)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 800
Speed 1/min : 1300
Del.quantity cm3/ : 126.0...130.0
1000H.: (124.0...132.0)

Dispersion cm3/ : 6.50
1000H.: (7.00)
Charge press. hPa : -
Speed 1/min : 800
Del.quantity cm3/ : 83.5...85.5
1000H.: (81.5...87.5)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 11.60
Speed 1/min : 1260...1280

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 140.0...180.0
1000H.: (137.0...183.0)
Contr.-rod trav.mm: 19.00...21.00

LOW IDLE

Speed 1/min : 350
Contr.-rod trav.mm: 6.50...6.60
Del.quantity cm3/ : 16.0...20.0
1000H.: (13.5...22.5)
Dispersion cm3/ : 3.50
1000H.: (5.50)

Remarks:
Perform pump setting only with IH hose
with restriction of 1.2 mm diameter.

Before checking sleeve position,
first adjust latching.

In unlatched condition, do not
operate greater than $n = 500$ 1/min

Set low idle at stop screw.

Set shutoff stop 1.5...2.0 mm before
shutoff.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : IHC 7,6 T 1
Edition : 10.08.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 403 446 199

Injection pump
Pump designation : PES6MW100/32ORS1160
EP type number : 0 413 406 147
Governor
Governor design. : RQV350...1200MW46-17
Governor no. : 0 420 083 148

Customer-spec. information
Customer : NAVISTAR

Engine : DTA-466

1st version kW : 154.5
Speed 1/min: 2400

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 2 417 413 037

Inlet press., bar : 2.80

Calibrating nozzle-holder
assembly : 1 688 901 016

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.5

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.95...4.05
 : (3.90...4.10)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing⁰CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 800

Contr.-rod trav.mm: 11.50...11.60

Del.quantity cm3/ : 10.4...10.6

100H.: (10.2...10.8)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 350.0
Contr.-rod trav. m: 6.3...6.4
Del.quantity cm3/ : 1.6...2.0
100H.: (1.3...2.2)
Dispersion cm3/ : 0.3
100H.: (0.5)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 1350
Sleeve travel mm: 8.30...8.50
2nd speed 1/min: 1460
Sleeve travel mm: 9.10...9.50
3rd speed 1/min: 550
Sleeve travel mm: 3.10...3.70
4th speed 1/min: 350
Sleeve travel mm: 1.30...1.70

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1380
Contr.-rod travelmm: 6.60...9.40

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 800
Charge press. hPa : 800
Del.quantity cm3/ : 104.0...106.0
1000H.: (102.0...108.0)
Dispersion cm3/ : 3.50
1000H.: (6.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 44...49

Testing:

1st c-rod trav.mm : 10.50
Speed 1/min : 1260...1280
2nd c-rod trav.mm : 4.00
Speed 1/min : 1375...1385
4th speed 1/min : 1500
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 10...18
Setting point w/out aux. spring
Speed 1/min : 350
Contr.-rod trav.mm: 6.3

Testing:

Speed 1/min : 100
C-rod trav.mm min : 9.00
Speed 1/min : 350
C-rod trav.mm : 6.30...6.40

CONSTANT REGULATION

Speed 1/min : 300...450
compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 190
Contr.-rod trav.mm: 10.60...10.70

Measurement

Speed 1/min : 500
1st pressure hPa : -
C-rod trav.mm : 10.20...10.30
2nd pressure hPa : 290
C-rod trav.mm : 11.10...11.20
3rd pressure hPa : 800
C-rod trav.mm : 11.00...11.10

SWITCH-OVER POINT

Speed 1/min : 220 (210)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 800
Speed 1/min : 1200
Del.quantity cm3/ : 107.0...111.0
1000H.: (105.0...113.0)

Dispersion cm³/ : 6.50
1000H.: (7.00)
Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm³/ : 75.5...77.5
1000H.: (73.5...79.5)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 10.50
Speed 1/min : 1260...1280

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm³/ : 140.0...180.0
1000H.: (137.0...183.0)
Contr.-rod trav.mm: 19.00...21.00

LOW IDLE

Speed 1/min : 350
Contr.-rod trav.mm: 6.30...6.40
Del.quantity cm³/ : 16.0...20.0
1000H.: (13.5...22.5)
Dispersion cm³/ : 3.50
1000H.: (5.50)

Remarks:
Perform pump setting only with IH hose
with restriction of 1.2 mm diameter.

Before checking sleeve position,
first adjust latching.

In unlatched condition, do not
operate greater than $n = 500$ 1/min

Set low idle at stop screw.

Set shutoff stop 1.5...2.0 mm before
shutoff.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : PER 8,8 F 1
Edition : 09.03.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 403 448 125

Injection pump
Pump designation : PES8MW100/72ORS1113
EP type number : 0 413 408 010
Governor
Governor design. : RQV250...900MW37-5
Governor no. : 0 420 083 100

Customer-spec. information
Customer : PERKINS

Engine : TV8.540M

1st version kW : 160.0
Speed 1/min: 1800

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 173...176

Test inj. tubing : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.00...3.10
: (2.95...3.15)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 8- 7- 5- 4- 3-
6- 2

SD ang. spacing^oCS: 0-45-90-135-180-225-
270-315

Tolerance + - ^o : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 900

Contr.-rod trav.mm: 13.20...13.30

Del.quantity cm3/ : 9.9...10.1

100H.: (9.7...10.3)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 7.4...7.5

Del.quantity cm3/ : 0.9...1.3

100H.: (0.7...1.6)

Dispersion cm3/ : 0.3

100H.: (0.5)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 950

Sleeve travel mm: 8.20...8.30

2nd speed 1/min: 1020

Sleeve travel mm: 9.20...9.40

3rd speed 1/min: 600

Sleeve travel mm: 4.40...5.00

4th speed 1/min: 250

Sleeve travel mm: 0.60...1.00

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 965

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 900

Del.quantity cm3/ : 99.5...101.5

1000H.: (97.5...103.5)

Dispersion cm3/ : 3.50

1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Control-lever
position degrees: 60...68

Testing:

1st c-rod trav.mm : 12.20

Speed 1/min : 940...950

2nd c-rod trav.mm : 4.00

Speed 1/min : 1010...1040

4th speed 1/min : 1200

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 12...20

Setting point w/out aux. spring

Speed 1/min : 250

Contr.-rod trav.mm: 7.4

Testing:

Speed 1/min : 100

C-rod trav.mm min : 9.00

Speed 1/min : 250

C-rod trav.mm : 7.40...7.50

CONSTANT REGULATION

Speed 1/min : 270...500

SWITCH-OVER POINT

Speed 1/min : 170 (200)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600

Del.quantity cm3/ : 93.5...97.5

1000H.: (91.5...99.5)

Dispersion cm3/ : 5.00

1000H.: (7.00)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 12.20

Speed 1/min : 940...950

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 90.0...100.0

1000H.: (87.0...103.0)

LOW IDLE

Speed 1/min : 250

Contr.-rod trav.mm: 7.40...7.50

Del.quantity cm3/ : 9.5...13.5

1000H.: (7.0...16.0)

Dispersion cm3/ : 3.50
1000H.: (5.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CUM 8,3 C 2
Edition : 21.8.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 403 466 103
Injection pump
Pump designation : PES6MW100/12ORS1137
EP type number : 0 413 406 131
Governor
Governor design. : RSV375...1100MW2A319
-2
Governor no. : 0 420 085 062

Customer-spec. information
Customer : CDC-USA

Engine : 6 CTA-8.3 L

1st version kW : 188.0
Speed 1/min: 2200

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 017

Opening
pressure, bar : 205...208

Perforated-plate
diameter mm : 0,6

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.50...3.60
: (3.45...3.65)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1100
Contr.-rod trav.mm: 14.10...14.20
Del.quantity cm3/ : 14.2...14.4
100H.: (14.0...14.6)
Dispersion cm3/ : 0.35
100H.: (0.6)

2nd speed 1/min: 425.0
Contr.-rod trav. m: 7.8...7.9
Del.quantity cm3/ : 1.9...2.3
100H.: (1.6...2.5)
Dispersion cm3/ : 0.35
100H.: (0.5)

SLEEVE POSITION

Control-lever position
Degree: -3
Speed 1/min: 800
Cont.-rod travelmm: 0.30...1.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1100
Del.quantity cm3/ : 142.0...144.0
1000H.: (140.0...146.0)
Dispersion cm3/ : 3.50
1000H.: (6.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 42...50

Testing:
1st c-rod trav.mm : 13.10
Speed 1/min: 1140...1150
2nd c-rod trav.mm : 4.00
Speed 1/min: 1215...1245
3rd c-rod trav.mm : 0.30...1.70

Speed 1/min : 1300

LOWEST RATED SPEED I

Control-lever

position degrees: 18...26

Setting point w/out aux. spring

Speed 1/min : 425

Contr.-rod trav.mm: 7.85

Testing:

Speed 1/min : 100

C-rod trav.mm min : 19.00

Speed 1/min : 425

C-rod trav.mm : 7.8...7.9

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1100

C-rod trav.mm : 14.10...14.20

2nd speed 1/min : 750

C-rod trav.mm : 14.80...14.90

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 750

Del.quantity cm3/ : 148.5...150.5

1000H.: (146.5...152.5)

Dispersion cm3/ : 5.00

1000H.: (7.00)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 13.10

Speed 1/min : 1140...1150

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 125.0...145.0

1000H.: (122.0...148.0)

Contr.-rod trav.mm: 19.00...21.00

LOW IDLE

Speed 1/min : 425

Contr.-rod trav.mm: 7.80...7.90

Del.quantity cm3/ : 19.0...23.0

1000H.: (16.5...25.5)

Dispersion cm3/ : 3.50

1000H.: (5.50)

Remarks:

Start-of-delivery mark at 10° cam
rotation angle after start of delivery,
cylinder 1

Starting/full-load transition speed
from holding magnet = 500 1/min.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CUM 8,3 C3
 Edition : 21.8.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 403 466 104
 Injection pump
 Pump designation : PES6MW100/120RS1137
 EP type number : 0 413 406 131
 Governor
 Governor design. : RSV400...1050MW2A319
 -3
 Governor no. : 0 420 085 074

Customer-spec. information
 Customer : CUMMINS/US

Engine : 6 CTA-8,3 L

1st version kW : 165.0
 Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 1 688 910 017

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0,6

Test inj. tubing : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6,00x2,00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY
 Date of mfg. : 30...32

Prestroke mm : 3,50...3,60
 : (3,45...3,65)
Contr.-rod trav.mm: 9,00...12,00
Cam sequence : 1-5-3-6-2-4

SD ang. spacing⁰CS: 0-60-120-180-240-300
Tolerance + - : 0,50 (0,75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1050

Contr.-rod trav.mm: 12,10...12,20

Del.quantity cm3/ : 12,4...12,6

 100H.: (12,2...12,8)

Dispersion cm3/ : 0,35

 100H.: (0,60)

2nd speed 1/min: 400
Contr.-rod trav. m: 6,90...7,00
Del.quantity cm3/ : 1,6...2,0
 100H.: (1,3...2,2)
Dispersion cm3/ : 0,35
 100H.: (0,50)

SLEEVE POSITION

Control-lever position
Degree: -3
Speed 1/min: 800
Contr.-rod travelmm: 0,30...1,00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1050
Del.quantity cm3/ : 124,0...126,0
 1000H.: (122,0...128,0)
Dispersion cm3/ : 3,5
 1000H.: (6,0)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 40...48

Testing:
1st c-rod trav.mm : 11,10
Speed 1/min : 1090...1100
2nd c-rod trav.mm : 4,00
Speed 1/min : 1150...1180
4th speed 1/min : 1250

C-rod trav.mm : 0,30...1,70

LOWEST RATED SPEED I

Control-lever
position degrees: 19...27
Setting point w/out aux. spring
Speed 1/min : 400
Contr.-rod trav.mm: 6,95

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19,00
Speed 1/min : 400
C-rod trav.mm : 6,90...7,00

SET IDLE AUXILIARY SPRING

Contr.-rod trav.mm: 4,00

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 1050
C-rod trav.mm : 12,10...12,20
2nd speed 1/min : 750
C-rod trav.mm : 14,20...14,30

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 750
Del.quantity cm3/ : 151,0...153,0
 1000H.: (149,0...155,0)
Dispersion cm3/ : 5,00
 1000H.: (7,00)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 11,10
Speed 1/min : 1090...1100

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 125,0...145,0
 1000H.: (122,0...148,0)
Contr.-rod trav.mm: 19,00...21,00

LOW IDLE

Speed 1/min : 400
Contr.-rod trav.mm: 6,90...7,00
Del.quantity cm3/ : 16,0...20,0
 1000H.: (13,5...22,5)
Dispersion cm3/ : 3,50
 1000H.: (5,50)

Remarks:

Start-of-delivery mark at 10° cam
rotation angle after start of delivery,

cylinder 1
Starting/full-load transition speed
from holding magnet = 500 1/min.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CUM 8,3 C4
 Edition : 21.8.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 403 466 105
 Injection pump
 Pump designation : PES6MW100/12ORS1137
 EP type number : 0 413 406 131
 Governor
 Governor design. : RSV400...1100MW2A319
 -4
 Governor no. : 0 420 085 080
 Customer-spec. information
 Customer : CUMMINS/US
 Engine : 6 CTA-8,3 L
 1st version KW : 171.5
 Speed 1/min: 2200

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 047
 Inlet press., bar : 1.50
 Calibrating nozzle-holder
 assembly : 1 688 901 017
 Opening
 pressure, bar : 207...210
 Perforated-plate
 diameter mm : 0,6
 Test inj. tubing : 1 680 750 008
 Outside diameter
 x Wall thickness
 x Length mm : 6,00X2,00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3,50...3,60
 : (3,45...3,65)
 Contr.-rod trav.mm: 9,00...12,00
 Cam sequence : 1-5-3-6-2-4

SD ang. spacing⁰CS: 0-60-120-180-240-300
 Tolerance + - : 0,50 (0,75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1100

 Contr.-rod trav.mm: 12,60...12,70

 Del.quantity cm3/ : 13,2...13,4

 100H.: (13,0...13,6)

 Dispersion cm3/ : 0,30

 100H.: (0,60)

 2nd speed 1/min: 400
 Contr.-rod trav. m: 7,00...7,10
 Del.quantity cm3/ : 1,6...2,0
 100H.: (1,3...2,2)
 Dispersion cm3/ : 0,30
 100H.: (0,50)

SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed 1/min: 800
 Cont.-rod travelmm: 0,30...1,00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 1100
 Del.quantity cm3/ : 132,5...134,5
 1000H.: (130,5...136,5)
 Dispersion cm3/ : 3,50
 1000H.: (6,00)

HIGHEST RATED SPEED

1st version
 Control-lever
 position degrees: 40...48

Testing:
 1st c-rod trav.mm : 11,60
 Speed 1/min : 1140...1150
 2nd c-rod trav.mm : 4,00
 Speed 1/min : 1200...1230
 4th speed 1/min : 1300

C-rod trav.mm : 0,30...1,70

LOWEST RATED SPEED I

Control-lever

position degrees: 16...24

Setting point w/out aux. spring

Speed 1/min : 400

Contr.-rod trav.mm: 7,05

Testing:

Speed 1/min : 100

C-rod trav.mm min : 19,00

Speed 1/min : 400

C-rod trav.mm : 7,00...7,10

SET IDLE AUXILIARY SPRING

Contr.-rod trav.mm: 4,00

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1100

C-rod trav.mm : 12,60...12,70

2nd speed 1/min : 750

C-rod trav.mm : 13,70...13,80

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 750

Del.quantity cm3/ : 141,0...143,0

1000H.: (139,0...145,0)

Dispersion cm3/ : 5,00

1000H.: (7,00)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 11,60

Speed 1/min : 1140...1150

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 125,0...145,0

1000H.: (122,0...148,0)

Contr.-rod trav.mm: 19,00...21,00

LOW IDLE

Speed 1/min : 400

Contr.-rod trav.mm: 7,00...7,10

Del.quantity cm3/ : 16,0...20,0

1000H.: (13,5...22,5)

Dispersion cm3/ : 3,50

1000H.: (5,50)

Remarks:

Start-of-delivery mark at 10° cam
rotation angle after start of delivery,

cylinder 1

Starting/full-load transition speed
from holding magnet = 500 1/min.

C-rod trav.mm : 0.30...1.70

LOWEST RATED SPEED I

Control-lever

position degrees: 18...26

Setting point w/out aux. spring

Speed 1/min : 400

Contr.-rod trav.mm: 5.9

Testing:

Speed 1/min : 100

C-rod trav.mm min : 19.00

Speed 1/min : 400

C-rod trav.mm : 5.90...6.00

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 750

Del.quantity cm3/ : 179.0...183.0

1000H.: (177.0...185.0)

Dispersion cm3/ : 5.00

1000H.: (7.00)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 12.00

Speed 1/min : 940...950

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 125.0...145.0

1000H.: (122.0...148.0)

Contr.-rod trav.mm: 19.00...21.00

LOW IDLE

Speed 1/min : 400

Contr.-rod trav.mm: 5.90...6.00

Del.quantity cm3/ : 16.0...20.0

1000H.: (13.5...22.5)

Dispersion cm3/ : 3.50

1000H.: (5.50)

Remarks:

Start-of-delivery mark 9° cam angle
after start of delivery cyl. 1.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 4,0 A 18
 Edition : 25.08.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 403 474 002
 Injection pump
 Pump designation : PES4MW100/72ORS1127
 EP type number : 0 413 404 103
 Governor
 Governor design. : RSV350...1200MWOA322
 Governor no. : 0 420 085 075

Customer-spec. information
 Customer : DB

Engine : OM 364 A

1st version kW : 66.0
 Speed 1/min: 2400

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.70...3.80
 : (3.65...3.85)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 3- 4- 2

SD ang. spacing°CS: 0-90-180-270
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1200

Contr.-rod trav.mm: 11.70...11.80

Del.quantity cm3/ : 7.8...8.0

100H.: (7.6...8.2)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 350

Contr.-rod trav. m: 6.8...7.4

Del.quantity cm3/ : 0.8...1.0

100H.: (0.6...1.4)

Dispersion cm3/ : 0.3

100H.: (0.5)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Contr.-rod travelmm: 0.30...1.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1200

Del.quantity cm3/ : 78.0...80.0

1000H.: (76.0...82.0)

Dispersion cm3/ : 3.50

1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 52...60

Testing:

1st c-rod trav.mm : 10.70

Speed 1/min : 1240...1245

2nd c-rod trav.mm : 4.00

Speed 1/min : 1322...1335

3rd c-rod trav.mm : 4.00

Speed 1/min : 1345...1375

4th speed 1/min : 1450

C-rod trav.mm : 0.30...1.70

LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 350
Contr.-rod trav.mm: 7.1

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.00
Speed 1/min : 350
C-rod trav.mm : 6.80...7.40
C-rod trav.mm : 2.00
Speed 1/min : 500...560

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1200
C-rod trav.mm : 11.70...11.80
2nd speed 1/min : 600
C-rod trav.mm : 12.60...12.80
3rd speed 1/min : 700
C-rod trav.mm : 12.60...12.80
4th speed 1/min : 950
C-rod trav.mm : 12.20...12.40

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600
Del.quantity cm3/ : 68.0...70.0
1000H.: (66.0...72.0)
Dispersion cm3/ : 5.00
1000H.: (7.00)
Speed 1/min : 900
Del.quantity cm3/ : 77.0...79.0
1000H.: (75.0...81.0)
Dispersion cm3/ : 5.00
1000H.: (7.00)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 10.70
Speed 1/min : 1240...1245

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 85.0...95.0
1000H.: (82.0...98.0)

LOW IDLE

Speed 1/min : 350
Contr.-rod trav.mm: 6.80...7.40
Del.quantity cm3/ : 8.0...10.0
1000H.: (6.0...14.0)
Dispersion cm3/ : 3.50
1000H.: (5.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 6,0 D
Edition : 25.08.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 403 476 029
Injection pump
Pump designation : PES6MW100/72ORS1124
EP type number : 0 413 406 118
Governor
Governor design. : RSV350...1200MW1A316
-1
Governer no. : 0 420 085 048
Customer-spec. information
Customer : DB

Engine : OM 366 A

1st version kW : 110.0
Speed 1/min: 2400

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.70...3.80
: (3.65...3.85)

Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1200

Contr.-rod trav.mm: 9.80...9.90

Del.quantity cm3/ : 7.6...7.8

100H.: (7.4...8.0)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 350

Contr.-rod trav. m: 6.4...7.0

Del.quantity cm3/ : 1.0...1.2

100H.: (0.8...1.4)

Dispersion cm3/ : 0.3

100H.: (0.5)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0.30...1.00

Governor-spring reload

Notch setting x : 4.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1200

Del.quantity cm3/ : 76.0...78.0

1000H.: /74.0...80.0)

Dispersion cm3/ : 3.50

1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 52...60

Testing:

1st c-rod trav.mm : 8.80

Speed 1/min : 1240...1245

2nd c-rod trav.mm : 4.00

Speed 1/min : 1280...1293

3rd c-rod trav.mm : 4.00

Speed 1/min : 1300...1330

4th speed 1/min : 1360

C-rod trav.mm : 0.30...1.70

LOWEST RATED SPEED I

Control-lever

position degrees: 12...20

Setting point w/out aux. spring

Speed 1/min : 2.00

Contr.-rod trav.mm: 465...525

SET IDLE AUXILIARY SPRING

Speed 1/min : 350

Contr.-rod trav.mm: 6.40...7.00

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1150

C-rod trav.mm : 9.90...10.10

2nd speed 1/min : 750

C-rod trav.mm : 10.60...10.70

3rd speed 1/min : 950

C-rod trav.mm : 10.30...10.40

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600

Del.quantity cm3/ : 66.0...68.0

1000H.: (64.0...70.0)

Dispersion cm3/ : 5.00

1000H.: (7.00)

Speed 1/min : 900

Del.quantity cm3/ : 76.0...78.0

1000H.: (73.0...81.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 8.80

Speed 1/min : 1240...1245

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 80.0...90.0

1000H.: (77.0...93.0)

LOW IDLE

Speed 1/min : 350

Contr.-rod trav.mm: 6.40...7.00

Del.quantity cm3/ : 10.0...12.0

1000H.: (8.00...14.0)

Dispersion cm3/ : 3.50

1000H.: (5.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : IHC 7,6 P 4
Edition : 24.08.87
Superceeded : 11.85
Calibrating oil : ISO-4113

Combination no. : 0 403 476 030

Injection pump
Pump designation : PES6MW100/32ORS1109
EP type number : 0 413 406 104
Governor
Governor design. : RSV350...1250MW2/313
-3
Governor no. : 0 420 085 049

Customer-spec. information
Customer : NAVI-STAR

Engine : DTI-466 C

1st version kW : 160.0
Speed 1/min: 2500

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 2 417 413 037

Inlet press., bar : 2.80

Calibrating nozzle-holder
assembly : 1 688 901 016

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.5

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

H03

Prestroke mm : 3.95...4.05
: (3.90...4.10)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 800

Contr.-rod trav.mm: 13.40...13.50

Del.quantity cm3/ : 11.6...11.8

100H.: (11.4...12.0)

Dispersion cm3/ : 0.35

100H.: (0.6)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 6.3...6.4

Del.quantity cm3/ : 1.8...2.3

100H.: (1.6...2.5)

Dispersion cm3/ : 0.35

100H.: (0.5)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0.30...1.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 800

Charge press. hPa : 900

Del.quantity cm3/ : 116.5...118.5

1000H.: (114.5...120.5)

Dispersion cm3/ : 3.50

1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 52...57

Testing:

1st c-rod trav.mm : 11.20

Speed 1/min : 1290...1300

2nd c-rod trav.mm : 4.00

Speed 1/min : 1390...1400

3rd c-rod trav.mm : 0.30...1.70
Speed 1/min : 1470

LOWEST RATED SPEED I

Control-lever
position degrees: 20...28
Setting point w/out aux. spring
Speed 1/min : 350
Contr.-rod trav.mm: 6.35

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.00
Speed 1/min : 350
C-rod trav.mm : 6.3...6.4

SET IDLE AUXILIARY SPRING

Contr.-rod trav.mm: 4.00

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 800
C-rod trav.mm : 13.40...13.50
2nd speed 1/min : 1250
C-rod trav.mm : 12.20...12.30
3rd speed 1/min : 840
C-rod trav.mm : 13.40...13.50
4th speed 1/min : 1200
C-rod trav.mm : 12.20...12.30

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500
Pressure hPa : 900
Contr.-rod trav.mm: 13.40...13.50

Measurement

Speed 1/min : 500

1st pressure hPa : 490
C-rod trav.mm : 12.70...13.00
2nd pressure hPa : 200
C-rod trav.mm : 11.80...11.90
3rd pressure hPa : -
C-rod trav.mm : 11.40...11.50

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 900
Speed 1/min : 1250
Del.quantity cm3/ : 105.0...107.0
1000H.: (103.0...109.0)
Dispersion cm3/ : 6.50
1000H.: (7.00)
Charge press. hPa : -

H04

Speed 1/min : 500
Del.quantity cm3/ : 82.0...84.0
1000H.: (79.0...87.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 11.20
Speed 1/min : 1290...1300

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 140.0...180.0
1000H.: (137.0...183.0)

Remarks:

Perform pump setting only with IH hose
with restriction of 1.2 mm diameter.

Starting/full-load transition speed
from holding magnet = 500 1/min.

Start-of-delivery mark: stop lever
25° toward shutoff: control-rod
travel = 9...12 mm. (Free travel of
stop lever must have been overcome
beforehand.)

Set low idle at stop screw.

Set shutoff stop 1.5...2.0 mm before
shutoff.

Check hydraulic latching of starting
fuel delivery with 1.5 bar air.

Position idle auxiliary spring to make
contact, then turn back 1/4 rotation

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : PEN 6,1 P
Edition : 20.08.87
Superceeded : 11.85
Calibrating oil : ISO-4113

Combination no. : 0 403 476 046

Injection pump
Pump designation : PES6MW100/32ORS1132
EP type number : 0 413 406 124
Governor
Governor design. : RSV325...1400MW2A314
Governor no. : 0 420 085 053

Customer-spec. information
Customer : VOLVO-PENTA

Engine : TD 61 A

1st version kW : 147.0
Speed 1/min: 2800

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 2.00X6.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 2.90...3.00
: (2.85...3.05)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1000

Contr.-rod trav.mm: 10.90...11.00

Del.quantity cm3/ : 8.7...8.9

100H.: (8.5...9.1)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 325

Contr.-rod trav. m: 6.0...6.1

Del.quantity cm3/ : 1.2...1.6

100H.: (0.9...1.8)

Dispersion cm3/ : 0.3

100H.: (0.5)

SLEEVE POSITION

Control-lever position

Degree: 3

Speed 1/min: 800

Contr.-rod travelmm: 0.30...1.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1000

Charge press. hPa : 900

Del.quantity cm3/ : 87.0...89.0

1000H.: (85.0...91.0)

Dispersion cm3/ : 3.50

1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 54...62

Testing:

1st c-rod trav.mm : 10.00

Speed 1/min : 1440...1450

2nd c-rod trav.mm : 4.00

Speed 1/min : 1520...1540

4th speed 1/min : 1650

C-rod trav.mm : 0.30...1.70

LOWEST RATED SPEED I

Control-lever

position degrees: 18...26

H07

Setting point w/out aux. spring

Speed 1/min : 325

Contr.-rod trav.mm: 5.5

Testing:

Speed 1/min : 100

C-rod trav.mm min : 19.00

Speed 1/min : 325

C-rod trav.mm : 5.50...5.60

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 220

Contr.-rod trav.mm: 10.00...10.10

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 9.80...9.90

2nd pressure hPa : 330

C-rod trav.mm : 10.20...10.50

3rd pressure hPa : 900

C-rod trav.mm : 10.90...11.00

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : -

Speed 1/min : 500

Del.quantity cm3/ : 50.0...52.0

1000H.: (48.0...54.0)

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 140.0...160.0

1000H.: (137.0...163.0)

Contr.-rod trav.mm: 19.00...21.00

LOW IDLE

Speed 1/min : 325

Contr.-rod trav.mm: 6.00...6.10

Del.quantity cm3/ : 12.0...16.0

1000H.: (9.5...18.5)

Dispersion cm3/ : 3.50

1000H.: (5.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : IHC 7,6 R16
Edition : 24.08.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 403 476 050
Injection pump
Pump designation : PES6MW100/32ORS1121
EP type number : 0 413 406 115
Governor
Governor design. : RSV500...1250MW2A312
-6
Governor no. : 0 420 085 063

Customer-spec. information
Customer : NAVI-STAR

Engine : DT-466 C

1st version kW : 160.3
Speed 1/min: 2500

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 2 417 413 037

Inlet press., bar : 2.80

Calibrating nozzle-holder
assembly : 1 688 901 016

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.5

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.95...4.05
: (3.90...4.10)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
0.50 (.075)

BASIC SETTING

1st speed 1/mi: 950
Contr.-rod trav.mm: 11.80...11.90
Del.quantity cm3/ : 10.8...11.0
100H.: (10.6...11.2)
Dispersion cm3/ : 0.35
100H.: (0.6)

2nd speed 1/min: 500
Contr.-rod trav. m: 6.2...6.3
Del.quantity cm3/ : 1.8...2.2
100H.: (1.3...2.6)
Dispersion cm3/ : 0.35
100H.: (0.5)

SLEEVE POSITION

Control-lever position
Degree: -3
Speed 1/min: 800
Contr.-rod travelmm: 0.30...1.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 950
Del.quantity cm3/ : 108.0...110.0
1000H.: (106.0...112.0)
Dispersion cm3/ : 3.50
1000H.: (6.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 49...54

Testing:
1st c-rod trav.mm : 10.60
Speed 1/min : 1295...1305
2nd c-rod trav.mm : 4.00
Speed 1/min : 1365...1375
3rd c-rod trav.mm : 0.30...1.70
Speed 1/min : 1400

LOWEST RATED SPEED I

Control-lever

position degrees: 22...30

Setting point w/out aux. spring

Speed 1/min : 500

Contr.-rod trav.mm: 6.25

Testing:

Speed 1/min : 100

C-rod trav.mm min : 19.00

Speed 1/min : 500

C-rod trav.mm : 6.2...6.3

SET IDLE AUXILIARY SPRING

Contr.-rod trav.mm: 4.00

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 1250

Del.quantity cm³/ : 107.0...111.0

1000H.: (105.0...113.0)

Dispersion cm³/ : 6.50

1000H.: (7.00)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 10.60

Speed 1/min : 1295...1305

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm³/ : 140.0...180.0

1000H.: (137.0...183.0)

Remarks:

Perform pump setting only with IH hose
with restriction of 1.2 mm diameter.

Starting/full-load transition speed
from holding magnet = 500 1/min.

Start-of-delivery mark: stop lever

25° toward shutoff: control-rod
travel = 9...12 mm. (Free travel of
stop lever must have been overcome
beforehand.)

Start-of-delivery mark: stop lever

H10

25° toward shutoff: control-rod
travel = 9...12 mm. (Free travel of
stop lever must have been overcome
beforehand.)

Set shutoff stop 1.5...2.0 mm before
shutoff.

Position idle auxiliary spring to make
contact, then turn back 1/4 rotation

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 6,0 D 22
 Edition : 25.08.87
 Superceeded : 09.03.87
 Calibrating oil : ISO-4113
 Combination no. : 0 403 476 054
 Injection pump
 Pump designation : PES6MW100/72ORS1139
 EP type number : 0 413 406 134
 Governor
 Governor design. : RSV350...1200MW1A316
 -2
 Governor no. : 0 420 085 076

Customer-spec. information
 Customer : DB

Engine : OM 366 A

1st version kW : 115.0
 Speed 1/min: 2400

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172..175

Test inj. tubing : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY
 Test pressure, bar: 30...32

Prestroke mm : 3.70...3.80
 : (3.65...3.85)

Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1200

Contr.-rod trav.mm: 11.80...11.90

Del.quantity cm3/ : 8.3...8.5

100H.: (8.1...8.7)

Dispersion cm3/ : 0.35

100H.: (0.6)

2nd speed 1/min: 350

Contr.-rod trav. m: 7.0...7.6

Del.quantity cm3/ : 1.0...1.2

100H.: (0.7...1.5)

Dispersion cm3/ : 0.35

100H.: (0.5)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0.30...1.00

Governor-spring reload

Notch setting x : 3.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1200

Del.quantity cm3/ : 83.0...85.0

1000H.: (81.0...87.0)

Dispersion cm3/ : 3.5

1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 64...72

Testing:

1st c-rod trav.mm : 10.80

Speed 1/min : 1240...1245

2nd c-rod trav.mm : 4.00

Speed 1/min : 1285...1298

3rd c-rod trav.mm : 4.00

Speed 1/min : 1335...1365

4th speed 1/min : 1450

C-rod trav.mm : 0.30...1.70

LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 350

Contr.-rod trav.mm: 7.3

Testing:

Speed 1/min : 100

C-rod trav.mm min : 19.00

Speed 1/min : 350

C-rod trav.mm : 7.00...7.60

C-rod trav.mm : 2.00

Speed 1/min : 515...585

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1200

C-rod trav.mm : 11.80...11.90

2nd speed 1/min : 750

C-rod trav.mm : 12.30...12.40

3rd speed 1/min : 1000

C-rod trav.mm : 11.90...12.10

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 750

Del.quantity cm3/ : 81.0...83.0

1000H.: (79.0...85.0)

Dispersion cm3/ : 5.00

1000H.: (7.00)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 10.80

Speed 1/min : 1240...1245

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 80.0...90.0

1000H.: (77.0...93.0)

LOW IDLE

Speed 1/min : 350

Contr.-rod trav.mm: 7.00...7.60

Del.quantity cm3/ : 10.0...12.0

1000H.: (7.0...15.0)

Dispersion cm3/ : 3.50

1000H.: (5.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 6 0 D 31
 Edition : 31.07.87
 Superceeded : 13.05.87
 Calibrating oil : ISO-4113
 Combination no. : 0 403 476 054
 Injection pump
 Pump designation : PES6MW100/72ORS1144
 EP type number : 0 413 406 138
 Governor
 Governor design. : RSV350...1200MW1A316
 -2
 Governor no. : 0 420 085 076

Customer-spec. information
 Customer : DB

Engine : OM366A

1st version kW : 115.0
 Speed 1/min: 2400

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.70...3.80
 : (3.65...3.85)

Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1200

Contr.-rod trav.mm: 11.80...11.90

Del.quantity cm3/ : 8.3...8.5

100H.: (8.1...8.7)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 7.0...7.6

Del.quantity cm3/ : 1.0...1.2

100H.: (0.7...1.5)

Dispersion cm3/ : 0.3

100H.: (0.5)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Contr.-rod travelmm: 0.30...1.00

Governor-spring reload

Notch setting x : 3.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1200

Del.quantity cm3/ : 83.0...85.0

1000H.: (81.0...87.0)

Dispersion cm3/ : 3.50

1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 63...71

Testing:

1st c-rod trav.mm : 10.80

Speed 1/min : 1240...1245

2nd c-rod trav.mm : 4.00

Speed 1/min : 1285...1298

3rd c-rod trav.mm : 4.00

Speed 1/min : 1335...1365

4th speed 1/min : 1450

C-rod trav.mm : 0.30...1.70

LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 350

Contr.-rod trav.mm: 7.3

Testing:

Speed 1/min : 100

C-rod trav.mm min : 19.00

Speed 1/min : 350

C-rod trav.mm : 7.00...7.60

C-rod trav.mm : 2.00

Speed 1/min : 515...585

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1200

C-rod trav.mm : 11.80...11.90

2nd speed 1/min : 750

C-rod trav.mm : 12.30...12.40

3rd speed 1/min : 1000

C-rod trav.mm : 11.90...12.10

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 750

Del.quantity cm3/ : 81.0...83.0

1000H.: (79.0...85.0)

Dispersion cm3/ : 5.00

1000H.: (7.00)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 10.80

Speed 1/min : 1240...1245

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 80.0...90.0

1000H.: (77.0...93.0)

Contr.-rod trav.mm: 19.00...21.00

LOW IDLE

Speed 1/min : 350

Contr.-rod trav.mm: 7.00...7.60

Del.quantity cm3/ : 10.0...12.0

1000H.: (7.0...15.0)

Dispersion cm3/ : 3.50

1000H.: (5.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 6,0 D 33
 Edition : 31.07.87
 Superceeded : 05.06.87
 Calibrating oil : ISO-4113
 Combination no. : 0 403 476 056
 Injection pump
 Pump designation : PES6MW100/72ORS1144
 EP type number : 0 413 406 138
 Governor
 Governor design. : RSV350...1200MW1A316
 -4
 Governor no. : 0 420 085 078
 Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM366A
 1st version kW : 100.0
 Speed 1/min: 2400

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 000
 Inlet press., bar : 1.50
 Calibrating nozzle-holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test inj. tubing : 1 680 750 008
 Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600
 (A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 30...32
 Prestroke mm : 3.70...3.80
 : (3.65...3.85)

Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1200

 Contr.-rod trav.mm: 10.00...10.10

 Del.quantity cm3/ : 7.5...7.7

 100H.: (7.3...7.9)

 Dispersion cm3/ : 0.3

 100H.: (0.6)

 2nd speed 1/min: 350.0
 Contr.-rod trav. m: 6.1...6.7
 Del.quantity cm3/ : 1.0...1.2
 100H.: (0.7...1.5)
 Dispersion cm3/ : 0.3
 100H.: (0.5)

SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed 1/min: 800
 Cont.-rod travelmm: 0.30...1.00

Governor-spring reload
 Notch setting x : 3.50

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 1200
 Del.quantity cm3/ : 75.0...77.0
 1000H.: (73.0...79.0)
 Dispersion cm3/ : 3.50
 1000H.: (6.00)

HIGHEST RATED SPEED

1st version
 Control-lever
 position degrees: 58...66

Testing:
 1st c-rod trav.mm : 10.5
 Speed 1/min : 1240...1245
 2nd c-rod trav.mm : 4.00
 Speed 1/min : 1271...1284
 3rd c-rod trav.mm : 4.00
 Speed 1/min : 1290...1320
 4th speed 1/min : 1450

C-rod trav.mm : 0.30...1.70
Sth speed 1/min : 1240...1255
C-rod trav.mm : 9.00

Dispersion cm3/ : 3.50
1000H.: (5.00)

Remarks:

LOWEST RATED SPEED I

Control-lever
position degrees: -
Setting point w/out aux. spring
Speed 1/min : 350
Contr.-rod trav.mm: 6.4

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.00
Speed 1/min : 350
C-rod trav.mm : 6.10...6.70
C-rod trav.mm : 2.00
Speed 1/min : 415...475

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1200
C-rod trav.mm : 10.00...10.10
2nd speed 1/min : 800
C-rod trav.mm : 10.90...11.00
3rd speed 1/min : 900
C-rod trav.mm : 10.90...11.00
4th speed 1/min : 1050
C-rod trav.mm : 10.30...10.50

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 800
Del.quantity cm3/ : 73.0...75.0
1000H.: (71.0...78.0)
Dispersion cm3/ : 5.00
1000H.: (7.00)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 10.5
Speed 1/min : 1240...1245

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 80.0...90.0
1000H.: (77.0...93.0)
Contr.-rod trav.mm: 19.00...21.00

LOW IDLE

Speed 1/min : 350
Contr.-rod trav.mm: 6.10...6.70
Del.quantity cm3/ : 10.0...12.0
1000H.: (7.0...15.0)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 6,0 D 35
Edition : 31.07.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 403 476 059

Injection pump
Pump designation : PES6MW100/72ORS1130
EP type number : 0 413 406 122
Governor
Governor design. : RSV300...1250MWOA32S
Governor no. : 0 420 085 083

Customer-spec. information
Customer : DB

Engine : OM 366 A

1st version kW : 125.0
Speed 1/min: 2500

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.70...3.80
: (3.65...3.85)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1230

Contr.-rod trav.mm: 11.50...11.60

Del.quantity cm3/ : 8.2...8.4

100H.: (8.0...8.6)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 575.0
Contr.-rod trav. m: 4.7...4.8
Del.quantity cm3/ : 1.0...1.4
100H.: (0.8...1.6)
Dispersion cm3/ : 0.3
100H.: (0.5)

SLEEVE POSITION

Control-lever position
Degree: -3
Speed 1/min: 800
Contr.-rod travelmm: 0.30...1.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1230
Del.quantity cm3/ : 82.0...84.0
1000H.: (80.0...86.0)
Dispersion cm3/ : 3.50
1000H.: (6.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 46...54

Testing:

1st c-rod trav.mm : 10.50
Speed 1/min : 1250...1260
2nd c-rod trav.mm : 4.00
Speed 1/min : 1280...1310
4th speed 1/min : 1350
C-rod trav.mm : 0.30...1.70

LOWEST RATED SPEED I

Control-lever
position degrees: 24...32
Setting point w/out aux. spring

Speed 1/min : 575
Contr.-rod trav.mm: 4.7

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.00
Speed 1/min : 575
C-rod trav.mm : 4.70...4.80

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600
Del.quantity cm3/ : 67.5...71.5
1000H.: (65.5...73.5)
Dispersion cm3/ : 5.00
1000H.: (7.00)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 10.50
Speed 1/min : 1250...1260

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 80.0...90.0
1000H.: (77.0...93.0)

LOW IDLE

Speed 1/min : 575
Contr.-rod trav.mm: 4.70...4.80
Del.quantity cm3/ : 10.0...14.0
1000H.: (8.0...16.0)
Dispersion cm3/ : 3.50
1000H.: (5.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 13,4 A
Edition : 20.08.87
Superceeded : 12.85
Calibrating oil : ISO-4113
Combination no. : 0 403 548 007
Injection pump
Pump designation : PE8MW100/720LS1118
EP type number : 0 413 508 102
Governor
Governor design. : RQV300...1150MW56
Governor no. : 0 420 083 075

Customer-spec. information
Customer : KHD

Engine : BF8L513

1st version kW : 222.0
Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 740 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.10...3.20
(3.05...3.25)

Contr.-rod trav.mm: 9.00...12.00

H2O

Cam sequence : 1- 8- 7- 2- 6- 5-
4- 3

SD ang. spacing°CS: 0-45-90-135-180-225-
270-315
Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1150
Contr.-rod trav.mm: 12.10...12.20
Del.quantity cm3/ : 12.9...13.1
100H.: (12.7...13.3)
Dispersion cm3/ : 0.3
100H.: (0.6)

2nd speed 1/min: 300.0
Contr.-rod trav. m: 6.9...7.0
Del.quantity cm3/ : 1.6...2.0
100H.: (1.3...2.2)
Dispersion cm3/ : 0.3
100H.: (0.5)

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1175
Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1150
Charge press. hPa : 800
Del.quantity cm3/ : 129.0...131.0
1000H.: (127.0...133.0)
Dispersion cm3/ : 3.50
1000H.: (6.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 51...59

Testing:
1st c-rod trav.mm : 11.10
Speed 1/min : 1190...1200
2nd c-rod trav.mm : 4.00
Speed 1/min : 1280...1310
4th speed 1/min : 1400
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 18...26
Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 6.9
C-rod trav.mm min : 8.50
Speed 1/min : 300
C-rod trav.mm : 6.90...7.00

CONSTANT REGULATION

Speed 1/min : 330...400

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1150
C-rod trav.mm : 12.10...12.20
2nd speed 1/min : 700
C-rod trav.mm : 12.50...12.60
3rd speed 1/min : 900
C-rod trav.mm : 12.30...12.40

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 360
Contr.-rod trav.mm: 12.20...12.30

Measurement

Speed 1/min : 500
1st pressure hPa : -
C-rod trav.mm : 11.40...11.50
2nd pressure hPa : 260
C-rod trav.mm : 11.70...12.00
3rd pressure hPa : 800
C-rod trav.mm : 12.50...12.60

SWITCH-OVER POINT

Speed 1/min : 230 (250)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 800
Speed 1/min : 700
Del.quantity cm3/ : 133.0...135.0
1000H.: (131.0...137.0)
Dispersion cm3/ : 5.00
1000H.: (7.00)
Charge press. hPa : -
Speed 1/min : 450
Del.quantity cm3/ : 104.0...106.0
1000H.: (101.5...108.5)

ROTATIONAL-SPEED LIMITATION

H21

1st version

1mm control-rod travel less than

full-load trav.mm: 11.10
Speed 1/min : 1190...1200

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 140.0...150.0
1000H.: (137.0...153.0)

LOW IDLE

Speed 1/min : 300
Contr.-rod trav.mm: 6.90...7.00
Del.quantity cm3/ : 16.00...20.00
1000H.: (13.5...22.5)
Dispersion cm3/ : 3.50
1000H.: (5.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 13,4 D4
Edition : 20.08.87
Superceeded : 11.85
Calibrating oil : ISO-4113

Combination no. : 0 403 548 014

Injection pump
Pump designation : PE8MW100/72OLS1128
EP type number : 0 413 508 103
Governor
Governor design. : RQ300...1150MW63-2
Governor no. : 0 420 082 019

Customer-spec. information
Customer : KHD

Engine : BF8L513

1st version kW : 235.0
Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 740 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.10...3.20
: (3.05...3.25)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 8- 7- 2- 6- 5-
4- 3

SD ang. spacing^oCS: 0-45-90-135-180-225-
270-315

Tolerance + - ^o : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1150

Contr.-rod trav.mm: 13.90...14.00

Del.quantity cm3/ : 14.1...14.3

100H.: (13.9...14.5)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 7.7...7.8

Del.quantity cm3/ : 1.3...1.7
100H.: (1.1...1.9)

Dispersion cm3/ : 0.3

100H.: (0.5)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 1280

Sleeve travel mm: 9.00...9.8

2nd speed 1/min: 1150

Sleeve travel mm: 6.60...6.80

3rd speed 1/min: 650

Sleeve travel mm: 5.80...6.20

4th speed 1/min: 300

Sleeve travel mm: 1.20...2.00

SLEEVE POSITION

Control-lever position

Degree: -2

Speed 1/min: 600

Contr.-rod travelmm: 19.20...20.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1150

Charge press. hPa : 900

Del.quantity cm3/ : 141.0...143.0
1000H.: (139.0...145.0)

Dispersion cm3/ : 3.50

1000H.: (6.00)

HIGHEST RATED SPEED

H23

1st version

Control-lever

position degrees: 34...42

Setting point:

Speed 1/min : 600

Contr.-rod trav.mm: 20.0

Testing:

1st c-rod trav.mm : 13.00

Speed 1/min : 1190...1200

2nd c-rod trav.mm : 4.00

Speed 1/min : 1285...1315

4th speed 1/min : 1370

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 8...16

Setting point w/out aux. spring

Speed 1/min : 300

Contr.-rod trav.mm: 7.7

Testing:

Speed 1/min : 100

C-rod trav.mm min : 9.30

Speed 1/min : 300

C-rod trav.mm : 7.70...7.80

CONSTANT REGULATION

Speed 1/min : 330...400

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1150

C-rod trav.mm : 13.90...14.00

2nd speed 1/min : 700

C-rod trav.mm : 14.90...15.00

3rd speed 1/min : 950

C-rod trav.mm : 14.20...14.50

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 480

Contr.-rod trav.mm: 14.40...14.50

Measurement

Speed 1/min : 500

1st pressure hPa : 900

C-rod trav.mm : 14.90...15.00

2nd pressure hPa : -

C-rod trav.mm : 12.70...12.80

3rd pressure hPa : 330

C-rod trav.mm : 13.20...13.50

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 900

Speed 1/min : 700

Del. quantity cm3/ : 153.0...155.0

1000H.: (151.0...157.0)

Dispersion cm3/ : 5.00

1000H.: (7.00)

Charge press. hPa : -

Speed 1/min : 450

Del. quantity cm3/ : 107.0...109.0

1000H.: (105.0...111.0)

STARTING FUEL DELIVERY

Speed 1/min : 100

Del. quantity cm3/ : 135.0...155.0

1000H.: (132.0...158.0)

LOW IDLE

Speed 1/min : 300

Contr.-rod trav.mm: 7.70...7.80

Del. quantity cm3/ : 13.0...17.0

1000H.: (11.0...19.0)

Dispersion cm3/ : 3.50

1000H.: (5.50)

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 13,4 D9
Edition : 24.08.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 403 548 019
Injection pump
Pump designation : PE8MW100/72OLS1118
EP type number : 0 413 508 102
Governor
Governor design. : RQV425...900MW76
Governor no. : 0 420 083 114

Customer-spec. information
Customer : KHD

Engine : BF8LS13

1st version kW : 160.0
Speed 1/min: 1800

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 740 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.10...3.20
: (3.05...3.25)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 8- 7- 2- 6- 5-
4- 3

SD ang. spacing°CS: 0-45-90-135-180-225-
270-315
Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 900

Contr.-rod trav.mm: 11.00...11.10

Del.quantity cm3/ : 10.3...10.5

100H.: (10.1...10.7)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 425.0

Contr.-rod trav. m: 6.0...6.1

Del.quantity cm3/ : 1.3...1.7

100H.: (1.1...1.9)

Dispersion cm3/ : 0.3

100H.: (0.5)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 950

Sleeve travel mm: 8.70...8.80

2nd speed 1/min: 1000

Sleeve travel mm: 9.70...10.10

3rd speed 1/min: 600

Sleeve travel mm: 3.90...4.50

4th speed 1/min: 425

Sleeve travel mm: 1.60...2.00

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 925

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 900

Del.quantity cm3/ : 103.0...105.0

1000H.: (101.0...107.0)

Dispersion cm3/ : 3.50

1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Control-lever
position degrees: 51...59

Testing:

1st c-rod trav.mm : 10.00
Speed 1/min : 940...950
2nd c-rod trav.mm : 4.50
Speed 1/min : 985...1015

LOWEST RATED SPEED I

Control-lever
position degrees: 20...28
Setting point w/out aux. spring
Speed 1/min : 425
Contr.-rod trav.mm: 6.05
Speed 1/min : 425
C-rod trav.mm : 6.00...6.10

CONSTANT REGULATION

Speed 1/min : 435...520

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 900
C-rod trav.mm : 11.00...11.10
2nd speed 1/min : 600
C-rod trav.mm : 11.60...11.70
3rd speed 1/min : 750
C-rod trav.mm : 11.20...11.50

SWITCH-OVER POINT

Speed 1/min : 360 (400)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600
Del.quantity cm3/ : 109.0...111.0
1000H.: (107.5...113.0)
Dispersion cm3/ : 5.00
1000H.: (7.00)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 10.00
Speed 1/min : 940...950

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 140.0...150.0
1000H.: (137.0...153.0)

LOW IDLE

Speed 1/min : 425
Contr.-rod trav.mm: 6.00...6.10

Del.quantity cm3/ : 13.0...17.0
1000H.: (11.0...19.0)
Dispersion cm3/ : 3.5
1000H.: (5.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MWM 5,9 B
Edition : 24.07.87
Superceeded : 4.85
Calibrating oil : ISO-4113

Combination no. : 9 400 085 246

Injection pump
Pump designation : PES6A90D320RS2705
EP type number : 9 400 083 098
Governor
Governor design. : RSV350...1400A2B2179
-1R
Governor no. : 9 420 083 196

Customer-spec. information
Customer : MWM

Engine : A 229-6 PID

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 003

Outside diameter
x Wall thickness
x Length mm : 6,20x1,00x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
: (2.75...2.95)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1400

Contr.-rod trav.mm: 10.30...10.40

Del.quantity cm3/ : 8.5...8.6

100H.: (8.3...8.8)

Dispersion cm3/ : 0.3

100H.: (0.5)

2nd speed 1/min: 325
Contr.-rod trav. m: 6.40...6.60
Del.quantity cm3/ : 1.3...1.7
100H.: (1.1...1.9)
Dispersion cm3/ : 0.2
100H.: (0.4)

SLEEVE POSITION

Control-lever position
Degree: -3
Speed 1/min: 800
Contr.-rod travelmm: 0.30...1.00

Governor-spring reload
Notch setting x : 4.50

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1400
Charge press. hPa : -
Del.quantity cm3/ : 85.5...86.5
1000H.: (85.5...88.5)
Dispersion cm3/ : 3.00
1000H.: (5.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 58...66

Testing:
1st c-rod trav.mm : 9.30
Speed 1/min : 1440...1450
2nd c-rod trav.mm : 4.00
Speed 1/min : 1515...1545
3rd c-rod trav.mm : 4.00
4th speed 1/min : 1600
C-rod trav.mm : 0.30...1.70

H28

LOWEST RATED SPEED I

Control-lever
position degrees: 14...22
Setting point w/out aux. spring
Speed 1/min : 325
Contr.-rod trav.mm: 6.0

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.00
Speed 1/min : 325
C-rod trav.mm : 6.50
C-rod trav.mm : 2.00
Speed 1/min : 430...490

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 1400
C-rod trav.mm : 10.30...10.40
2nd speed 1/min : 500
C-rod trav.mm : 11.00...11.10
4th speed 1/min : 900
C-rod trav.mm : 10.70...11.00

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 500
Del.quantity cm3/ : 87.0...89.0
1000H.: (84.5...91.5)
Speed 1/min : 900
Del.quantity cm3/ : 90.0...92.0
1000H.: (87.5...94.5)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 9.30
Speed 1/min : 1440...1450

STARTING FUEL DELIVERY

Speed 1/min : 100
Contr.-rod trav.mm: 19.00...21.00

LOW IDLE

Speed 1/min : 325
Contr.-rod trav.mm: 4.00...4.50

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : FOR 6,6 A3
Edition : 27.8.87
Superceeded : 2.86
Calibrating oil : ISO-4113
Combination no. : 9 400 085 263
Injection pump
Pump designation : PES6A95D410RS2688
EP type number : 9 400 083 090
Governor
Governor design. : RQV350...1400AB1202-
1L
Governor no. : 9 420 080 220

Customer-spec. information
Customer : FORD (FT0)

Engine : 6,6 1 NA

1st version kW : 103.0
Speed 1/min: 2800

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6,00x2,00x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 3,15...3,25
: (3,10...3,30)

J02

Contr.-rod trav.mm: 9,00...12,00
Cam sequence : 1-5-3-6-2-4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - : 0,50 (0,75)

SD mark cyl. no. : 1

START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 9,00...12,00
& c-rod tray max. : 21,00
Difference°CS : 2,00...3,00

BASIC SETTING

1st speed 1/mi: 1400

Contr.-rod trav.mm: 10,10...10,20

Del.quantity cm3/ : 7,0...7,2

100H.: (6,8...7,4)

Dispersion cm3/ : 0,35

100H.: (0,60)

2nd speed 1/min: 350

Contr.-rod trav. m: 6,40...6,60

Del.quantity cm3/ : 0,7...1,1

100H.: (0,5...1,3)

Dispersion cm3/ : 0,35

100H.: (0,55)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 350

Sleeve travel mm: 1,30...1,60

2nd speed 1/min: 700

Sleeve travel mm: 4,20...4,60

3rd speed 1/min: 1100

Sleeve travel mm: 6,10...6,40

4th speed 1/min: 1400

Sleeve travel mm: 8,50...8,60

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1420

Contr.-rod travelmm: 15,20...17,80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1400

Del.quantity cm3/ : 70,5...72,5
1000H.: (68,5...74,5)
Dispersion cm3/ : 3,5
1000H.: (6,0)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 59...57

Testing:

1st c-rod trav.mm : 9,10
Speed 1/min : 1440...1450
2nd c-rod trav.mm : 4,00
Speed 1/min : 1540...1570
4th speed 1/min : 1700
C-rod trav.mm : 0,00...1,00

LOWEST RATED SPEED I

Control-lever

position degrees: 10...18

Testing:

Speed 1/min : 100
C-rod trav.mm min : 9,00
Speed 1/min : 350
C-rod trav.mm : 6,40...6,60
C-rod trav.mm : 2,00
Speed 1/min : 540...600

SWITCH-OVER POINT

Speed 1/min : 290 (310)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 800
Del.quantity cm3/ : 60,0...63,0
1000H.: (57,5...65,5)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 9,10
Speed 1/min : 1440...1450

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 112,0...122,0
1000H.: (-)
Contr.-rod trav.mm: 19,0...21,0

LOW IDLE

Speed 1/min : 350
Contr.-rod trav.mm: 6,40...6,60

Del.quantity cm3/ : 7,0...11,0
1000H.: (5,0...13,0)
Dispersion cm3/ : 3,5
1000H.: (5,5)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : FOR 6,6 H
Edition : 21.05.87
Superceeded : 6.86
Calibrating oil : ISO-4113

Combination no. : 9 400 085 265

Injection pump
Pump designation : PES6A95D410RS2722
EP type number : 9 400 084 004
Governor
Governor design. : RQV350...1300AB1220L
Governor no. : 9 420 080 223

Customer-spec. information
Customer : FORD NEW HOLLAND

Engine : 6.6 1 TC

1st version kW : 119.3
Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.00

Calibrating nozzle-holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.6

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 3.15...3.25
 : (3.10...3.30)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1300

Contr.-rod trav.mm: 10.20...10.30

Del.quantity cm3/ : 7.5...7.7

100H.: (7.3...7.9)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 4.9...5.1

Del.quantity cm3/ : 1.1...1.5

100H.: (0.9...1.7)

Dispersion cm3/ : 0.3

100H.: (0.5)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 350

Sleeve travel mm: 1.20...1.50

2nd speed 1/min: 550

Sleeve travel mm: 3.00...3.30

3rd speed 1/min: 1000

Sleeve travel mm: 5.80...6.20

4th speed 1/min: 1340

Sleeve travel mm: 8.50...8.60

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1340

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1300

Charge press. hPa : 700

Del.quantity cm3/ : 75.0...77.0

1000H.: (73.0...79.0)

Dispersion cm3/ : 3.50
1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 58...66

Testing:

1st c-rod trav.mm : 9.20

Speed 1/min : 1360...1370

2nd c-rod trav.mm : 4.00

Speed 1/min : 1430...1460

4th speed 1/min : 1600

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 8...16

Testing:

Speed 1/min : 100

C-rod trav.mm min : 7.50

Speed 1/min : 350

C-rod trav.mm : 4.90...5.10

C-rod trav.mm : 2.00

Speed 1/min : 490...550

CONSTANT REGULATION

Speed 1/min : 370...440

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 700

Contr.-rod trav.mm: 10.20...10.30

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 9.20...9.30

2nd pressure hPa : 450

C-rod trav.mm : 9.80...10.00

3rd pressure hPa : 360

C-rod trav.mm : 9.40...9.50

SWITCH-OVER POINT

Speed 1/min : 290 (310)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 700

Speed 1/min : 800

Del.quantity cm3/ : 62.0...65.0
1000H.: (60.5...66.5)
Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 53.0...55.0
1000H.: (51.0...57.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 9.20
Speed 1/min : 1360...1370

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 150.0...170.0
1000H.: (-)
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 350
Contr.-rod trav.mm: 4.90...5.10
Del.quantity cm3/ : 11.0...15.0
1000H.: (9.0...17.0)
Dispersion cm3/ : 3.50
1000H.: (5.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MWM 3,9 D
Edition : 24.07.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 9 400 085 272

Injection pump
Pump designation : PES4A90D320RS2744
EP type number : 9 400 084 012
Governor
Governor design. : RSV350...1300A2B2215
-2R
Governor no. : 9 420 083 234

Customer-spec. information
Customer : MWM

Engine : TD 229-4

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 046

Inlet press., bar : 1.00

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.70...2.80
: (2.65...2.85)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 3- 4- 2

SD ang. spacing°CS: 0-90-180-270
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 9.00...12.00
& c-rod tray max. : 21.00
Difference ° CS : 3.00...4.00

BASIC SETTING

1st speed 1/mi: 1300

Contr.-rod trav.mm: 10.60...10.70

Del.quantity cm3/ : 8.9...9.0

100H.: (8.7...9.2)

Dispersion cm3/ : 0.3

100H.: (0.5)

2nd speed 1/min: 350
Contr.-rod trav. m: 4.90...5.10
Del.quantity cm3/ : 1.1...1.5
100H.: (0.9...1.7)
Dispersion cm3/ : 0.2
100H.: (0.4)

SLEEVE POSITION

Control-lever position
Degree: -3
Speed 1/min: 800
Contr.-rod travelmm: 0.30...1.00

Governor-spring reload
Notch setting x : 5.75

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1300
Del.quantity cm3/ : 89.0...90.0
1000H.: (87.0...92.0)
Dispersion cm3/ : 3.00
1000H.: (5.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 24...32

Testing:
1st c-rod trav.mm : 9.60
Speed 1/min : 1340...1350

2nd c-rod trav.mm : 4.00
Speed 1/min : 1410...1440
3rd c-rod trav.mm : 4.00
4th speed 1/min : 1600
C-rod trav.mm : 0.30...1.70

LOWEST RATED SPEED I

Control-lever
position degrees: 55...63
Setting point w/out aux. spring
Speed 1/min : 350
Contr.-rod trav.mm: 4.5

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.00
Speed 1/min : 350
C-rod trav.mm : 5.00
C-rod trav.mm : 2.00
Speed 1/min : 540...600

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 1300
C-rod trav.mm : 10.60...10.70
2nd speed 1/min : 500
C-rod trav.mm : 11.20...11.30
3rd speed 1/min : 800
C-rod trav.mm : 10.90...11.20
4th speed 1/min : 900
C-rod trav.mm : 10.80...10.90

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 500
Del.quantity cm3/ : 87.0...89.0
1000H.: (84.5...91.5)
Speed 1/min : 900
Del.quantity cm3/ : 89.0...91.0
1000H.: (86.5...93.5)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 9.60
Speed 1/min : 1340...1350

STARTING FUEL DELIVERY

Speed 1/min : 100
Contr.-rod trav.mm: 19.00...21.00

LOW IDLE

Speed 1/min : 350
Contr.-rod trav.mm: 4.90...5.10
Del.quantity cm3/ : 11.0...15.0
1000H.: (9.0...17.0)

Dispersion cm³/ : 2.50
1000H.: (4.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 6,0 E
Edition : 24.07.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 9 400 085 288

Injection pump
Pump designation : PES6A90D410RS2596-1
EP type number : 9 400 084 008
Governor
Governor design. : RQV300...1300AB1066-
3L
Governor no. : 9 420 080 230

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM 366 A

1st version kW : 127.0
Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.00

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
: (1.95...2.15)

Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1300

Contr.-rod trav.mm: 13.10...13.20

Del.quantity cm3/ : 8.6...8.7

100H.: (8.4...8.9)

Dispersion cm3/ : 0.3

100H.: (0.5)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 8.4...8.6

Del.quantity cm3/ : 1.0...1.4

100H.: (0.8...1.6)

Dispersion cm3/ : 0.2

100H.: (0.4)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 0.70...1.30

2nd speed 1/min: 500

Sleeve travel mm: 2.20...2.60

3rd speed 1/min: 800

Sleeve travel mm: 4.30...4.70

4th speed 1/min: 1100

Sleeve travel mm: 6.10...6.40

5th speed 1/min: 1375

Sleeve travel mm: 8.40...8.50

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1375

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1300

Charge press. hPa : 1000

Del.quantity cm3/ : 86.0...87.0

1000H.: (84.0...89.0)

Dispersion cm3/ : 3.00
1000H.: (5.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 116...124

Testing:

1st c-rod trav.mm : 12.10

Speed 1/min : 1340...1350

2nd c-rod trav.mm : 4.00

Speed 1/min : 1470...1500

3rd c-rod trav.mm : 4.00

4th speed 1/min : 1600

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 74...82

Testing:

Speed 1/min : 100

C-rod trav.mm min : 10.00

Speed 1/min : 300

C-rod trav.mm : 8.40...8.60

C-rod trav.mm : 2.00

Speed 1/min : 570...630

CONSTANT REGULATION

Speed 1/min : 590...660

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1300

C-rod trav.mm : 13.10...13.20

2nd speed 1/min : 800

C-rod trav.mm : 14.10...14.20

3rd speed 1/min : 1000

C-rod trav.mm : 13.90...14.10

4th speed 1/min : 1150

C-rod trav.mm : 13.30...13.60

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 1000

Contr.-rod trav.mm: 14.10...14.20

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 12.80...12.90

2nd pressure hPa : 750

C-rod trav.mm : 13.90...14.00

3rd pressure hPa : 650

C-rod trav.mm : 13.20...13.40

SWITCH-OVER POINT

Speed 1/min : 240 (260)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 1000

Speed 1/min : 800

Del.quantity cm3/ : 89.0...91.0

1000H.: (86.5...93.5)

Charge press. hPa : 1000

Speed 1/min : 1000

Del.quantity cm3/ : 90.0...92.0

1000H.: (87.5...94.5)

Charge press. hPa : -

Speed 1/min : 500

Del.quantity cm3/ : 66.5...68.5

1000H.: (64.5...70.5)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 12.10

Speed 1/min : 1340...1350

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 71.0...81.0

1000H.: (68.0...84.0)

Contr.-rod trav.mm: 14.70...15.70

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 11,8 01
Edition : 24.07.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 9 400 087 256

Injection pump
Pump designation : PE6P110A720RS371
EP type number : 0 411 816 123
Governor
Governor design. : RQ250/1100PA419R
Governor no. : 9 420 080 138

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM 355 A

1st version kW : 210.0
Speed 1/min: 2200

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 004

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values _ _ _ _

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
: (2.75...2.95)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1100

Contr.-rod trav.mm: 11.70...11.80

Del.quantity cm3/ : 16.0...16.2

100H.: (15.7...16.5)

Dispersion cm3/ : 0.4

100H.: (0.7)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 5.9...6.1

Del.quantity cm3/ : 1.1...1.6

100H.: (0.8...1.8)

Dispersion cm3/ : 0.4

100H.: (0.7)

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 600

Contr.-rod travelmm: 15.60...16.40

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1100

Del.quantity cm3/ : 160.0...162.0

1000H.: (157.0...165.0)

Dispersion cm3/ : 4.00

1000H.: (7.50)

HIGHEST RATED SPEED

Setting point:

Speed 1/min : 600

Contr.-rod trav.mm: 16.0

Testing:

1st c-rod trav.mm : 10.70

Speed 1/min : 1145...1160

2nd c-rod trav.mm : 4.00

Speed 1/min : 1210...1240

3rd c-rod trav.mm : 4.00

4th speed 1/min : 1300

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 250

Contr.-rod trav.mm: 6.0

Testing:

Speed 1/min : 100

C-rod trav.mm min : 7.50

Speed 1/min : 250

C-rod trav.mm : 6.00

C-rod trav.mm : 2.00

Speed 1/min : 390...430

Speed 1/min : 500

C-rod trav.mm max : 1.00

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 500

Del.quantity cm3/ : 149.0...153.0

1000H.: (146.0...156.0)

SETTING CONTROL-ROD STOP

Speed 1/min : 500

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 10.70

Speed 1/min : 1145...1160

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 144.0...160.0

1000H.: (-)

Contr.-rod trav.mm: 12.70...13.10

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CAT 10.5 H
Edition : 10.8.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 9 400 087 281
Injection pump
Pump designation : PES6P80A720LS456
EP type number : 9 400 087 020
Governor
Governor design. : RQV350...1000PA637
Governor no. : 9 420 080 158

Customer-spec. information
Customer : CATERPILLAR

Engine : 3306 T

1st version kW : 110.4
Speed 1/min: 2000

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.5

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 004

Outside diameter
x Wall thickness
x Length mm : 6,00X1,50X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1,65...1,75
: (1,60...1,80)

Contr.-rod trav.mm: 9,00...12,00

Cam sequence : 1-5-3-6-2-4

SD ang. spacing⁰CS: 0-60-120-180-240-300
Tolerance + - ° : 0,50 (0,75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1000

Contr.-rod trav.mm: 12,80...12,90

Del.quantity cm3/ : 11,6...11,7

100H.: (11,4...11,8)

Dispersion cm3/ : 0,25

100H.: (0,40)

2nd speed 1/min: 350

Contr.-rod trav. m: 6,70...6,90

Del.quantity cm3/ : 0,9...1,6

100H.: (0,7...1,8)

Dispersion cm3/ : 0,20

100H.: (0,35)

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1010

Cont.-rod travelmm: 15,20...17,80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1000

Del.quantity cm3/ : 116,0...117,0

1000H.: (114,5...118,5)

Dispersion cm3/ : 2,5

1000H.: (4,0)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 65...74

Testing:

1st c-rod trav.mm : 11,80

Speed 1/min : 1030...1040

2nd c-rod trav.mm : 4,00

Speed 1/min : 1100...1130

4th speed 1/min : 1220

C-rod trav.mm : 0,00...1,00

LOWEST RATED SPEED I

Control-lever

position degrees: 13...21

diaphragm.

Testing:

Speed 1/min : 250
C-rod trav.mm min : 11,00
Speed 1/min : 350
C-rod trav.mm : 5,90...6,10
C-rod trav.mm : 2,00
Speed 1/min : 510...570

CONSTANT REGULATION

Speed 1/min : 300...400

TORQUE CONTROL

Dimension a mm : 0,60
Torque-control curve - 1st version
1st speed 1/min : 1000
C-rod trav.mm : 12,80...12,90
2nd speed 1/min : 870
C-rod trav.mm : 13,00...13,30
3rd speed 1/min : 700
C-rod trav.mm : 13,30...13,50
4th speed 1/min : 500
C-rod trav.mm : 13,40...13,50

SWITCH-OVER POINT

Speed 1/min : 290 (310)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 700
Del.quantity cm3/ : 115,0...117,0
1000H.: (114,0...118,0)
Speed 1/min : 500
Del.quantity cm3/ : 112,5...114,5
1000H.: (111,5...115,5)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 11,80
Speed 1/min : 1030...1040

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 152,0...172,0
1000H.: (-)
Contr.-rod trav.mm: 17,60...18,60

LOW IDLE

Speed 1/min : 350
Contr.-rod trav.mm: 5,90...6,10

Remarks:

Start-of-delivery setting with R0B0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CAT 10,5 A4
Edition : 10.8.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 9 400 087 282

Injection pump
Pump designation : PES6P80A720LS456
EP type number : 9 400 087 029
Governor
Governor design. : RQV350...950PA609
Governor no. : 9 420 080 154

Customer-spec. information
Customer : CATERPILLAR

Engine : 3306 T

1st version kW : 103.0
Speed 1/min: 1900

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.5

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 004

Outside diameter
x Wall thickness
x Length mm : 6,00x1,50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values _____

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1,65...1,75
: (1,60...1,80)
Contr.-rod trav.mm: 9,00...12,00

Cam sequence : 1-5-3-6-2-4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0,50 (0,75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 950

Contr.-rod trav.mm: 12,20...12,30

Del.quantity cm3/ : 10,5...10,6

100H.: (11,3...10,7)

Dispersion cm3/ : 0,25

100H.: (0,40)

2nd speed 1/min: 350

Contr.-rod trav. m: 6,7...6,9

Del.quantity cm3/ : 0,9...1,6

100H.: (0,7...1,8)

Dispersion cm3/ : 0,20

100H.: (0,35)

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1010

Contr.-rod travelmm: 15,20...17,80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 950

Del.quantity cm3/ : 105,0...106,0

1000H.: (113,5...107,5)

Dispersion cm3/ : 2,5

1000H.: (3,5)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 62...71

Testing:

1st c-rod trav.mm : 11,20

Speed 1/min : 980...990

2nd c-rod trav.mm : 4,00

Speed 1/min : 1050...1080

4th speed 1/min : 1150

C-rod trav.mm : 0,00...1,00

LOWEST RATED SPEED I

Control-lever

position degrees: 13...21

Testing:

Speed 1/min : 250

C-rod trav.mm min : 11,00

Speed 1/min : 350

C-rod trav.mm : 5,90...6,10

C-rod trav.mm : 2,00

Speed 1/min : 510...570

CONSTANT REGULATION

Speed 1/min : 300...400

TORQUE CONTROL

Dimension a mm : 0,90

Torque-control curve - 1st version

1st speed 1/min : 950

C-rod trav.mm : 12,20...12,30

2nd speed 1/min : 800

C-rod trav.mm : 12,60...12,90

3rd speed 1/min : 700

C-rod trav.mm : 13,00...13,20

4th speed 1/min : 500

C-rod trav.mm : 13,10...13,20

SWITCH-OVER POINT

Speed 1/min : 290 (310)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 700

Del.quantity cm3/ : 111,0...113,0

1000H.: (110,0...114,0)

Speed 1/min : 500

Del.quantity cm3/ : 108,0...110,0

1000H.: (107,0...111,0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 11,20

Speed 1/min : 980...990

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 152,0...172,0

1000H.: (-)

Contr.-rod trav.mm: 17,60...18,60

LOW IDLE

Speed 1/min : 350

Contr.-rod trav.mm: 5,90...6,10

Remarks:

Start-of-delivery setting with R0B0

diaphragm.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CAT 10,5 AS
Edition : 10.8.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 9 400 087 289

Injection pump
Pump designation : PES6P80A720LS456
EP type number : 9 400 087 029
Governor
Governor design. : RQV350...1000PA609
Governor no. : 9 420 080 165

Customer-spec. information
Customer : CATERPILLAR

Engine : 3306 T

1st version kW : 121.4
Speed 1/min: 2000

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.5

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 004

Outside diameter
x Wall thickness
x Length mm : 6,00x1,50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1,65...1,75
: (1,60...1,80)

Contr.-rod trav.mm: 9,00...12,00

Cam sequence : 1-5-3-6-2-4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0,50 (075)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1000

Contr.-rod trav.mm: 13,40...13,20

Del.quantity cm3/ : 12,1...12,2

100H.: (12,1...12,3)

Dispersion cm3/ : 0,25

100H.: (0,40)

2nd speed 1/min: 350

Contr.-rod trav. m: 6,7...6,9

Del.quantity cm3/ : 0,95...1,65

100H.: (0,80...1,90)

Dispersion cm3/ : 0,20

100H.: (0,35)

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1010

Contr.-rod travelmm: 15,20...17,80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1000

Del.quantity cm3/ : 121,5...122,5

1000H.: 121,0...123,0

Dispersion cm3/ : 2,5

1000H.: (4,0)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 66...75

Testing:

1st c-rod trav.mm : 12,10

Speed 1/min : 1030...1040

2nd c-rod trav.mm : 4,00

Speed 1/min : 1110...1140

4th speed 1/min : 1230

C-rod trav.mm : 0,00...1,00

LOWEST RATED SPEED I

Control-lever

position degrees: 13...21

Testing:

Speed 1/min : 250

C-rod trav.mm min : 11,00

Speed 1/min : 350

C-rod trav.mm : 5,90...6,10

C-rod trav.mm : 2,00

Speed 1/min : 510...570

CONSTANT REGULATION

Speed 1/min : 300...400

TORQUE CONTROL

Dimension a mm : 0,90

Torque-control curve - 1st version

1st speed 1/min : 1000

C-rod trav.mm : 13,10...13,20

2nd speed 1/min : 850

C-rod trav.mm : 13,30...13,60

3rd speed 1/min : 700

C-rod trav.mm : 13,90...14,10

4th speed 1/min : 500

C-rod trav.mm : 14,00...14,10

SWITCH-OVER POINT

Speed 1/min : 290 (310)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 700

Del.quantity cm3/ : 126,0...128,0

1000H.: (124,0...130,0)

Speed 1/min : 500

Del.quantity cm3/ : 122,5...124,5

1000H.: (120,5...126,5)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 12,10

Speed 1/min : 1030...1040

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 152,0...172,0

1000H.: (-)

Contr.-rod trav.mm: 17,60...18,60

LOW IDLE

Speed 1/min : 350

Contr.-rod trav.mm: 5,90...6,10

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CAT 10,5 A
Edition : 10.8.87
Superceeded : 7.84
Calibrating oil : ISO-4113
Combination no. : 9 400 087 292
Injection pump
Pump designation : PES6P80A72OLS456
EP type number : 9 400 087 029
Governor
Governor design. : RQV350...1000PA609-1
Governor no. : 9 420 080 172

Customer-spec. information
Customer : CATERPILLAR

Engine : 3306 T

1st version kW : 110.4
Speed 1/min: 2000

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.5

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6,00x1,50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 1,65...1,75
: (1,60...1,80)
Contr.-rod trav,mm: 9,00...12,00

Cam sequence : 1-5-3-6-2-4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - : 0,50 (0,75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 990

Contr.-rod trav,mm: 12,50...12,60

Del.quantity cm3/ : 11,1...11,2

100H.: (10,9...11,3)

Dispersion cm3/ : 0,20

100H.: (0,35)

2nd speed 1/min: 350

Contr.-rod trav. m: 6,70...6,90

Del.quantity cm3/ : 0,95...1,65

100H.: (-)

Dispersion cm3/ : 0,20

100H.: (0,30)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 325

Sleeve travel mm: 0,50...2,00

2nd speed 1/min: 400

Sleeve travel mm: 2,70...3,10

3rd speed 1/min: 500

Sleeve travel mm: 2,50...4,20

4th speed 1/min: 800

Sleeve travel mm: 6,10...6,60

5th speed 1/min: 1010

Sleeve travel mm: 8,40...8,60

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1010

Contr.-rod travelmm: 15,20...17,80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 990

Del.quantity cm3/ : 111,0...112,0

1000H.: (109,5...113,5)

Dispersion cm3/ : 2,0

1000H.: (3,5)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 65...74

Testing:

1st c-rod trav.mm : 11,50

Speed 1/min : 1020...1030

2nd c-rod trav.mm : 4,00

Speed 1/min : 1090...1120

4th speed 1/min : 1220

C-rod trav.mm : 0,00...1,00

LOWEST RATED SPEED I

Control-lever

position degrees: 13...21

Testing:

Speed 1/min : 250

C-rod trav.mm min : 11,00

Speed 1/min : 350

C-rod trav.mm : 5,90...6,10

C-rod trav.mm : 2,00

Speed 1/min : 510...570

CONSTANT REGULATION

Speed 1/min : 300...400

TORQUE CONTROL

Dimension a mm : 1.00

Torque-control curve - 1st version

1st speed 1/min : 990

C-rod trav.mm : 12,50...12,60

2nd speed 1/min : 500

C-rod trav.mm : 13,50...13,60

3rd speed 1/min : 700

C-rod trav.mm : 13,40...13,60

4th speed 1/min : 850

C-rod trav.mm : 12,80...13,10

SWITCH-OVER POINT

Speed 1/min : 290 (310)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 500

Del.quantity cm3/ : 117,0...119,0

1000H.: (114,0...118,0)

Speed 1/min : 700

Del.quantity cm3/ : 114,5...116,5

1000H.: (113,5...117,5)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 11,50

Speed 1/min : 1020...1030

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 152,0...172,0

1000H.: (-)

Contr.-rod trav.mm: 17,60...18,60

LOW IDLE

Speed 1/min : 350

Contr.-rod trav.mm: 5,90...6,10

Remarks:

Start-of-delivery setting with ROBO diaphragm.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CAT 7,0 A6
Edition : 10.8.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 9 400 087 293
Injection pump
Pump designation : PES4P80A72OLS440
EP type number : 9 400 087 028
Governor
Governor design. : RQV350...950PA609-2
Governor no. : 9 420 080 173

Customer-spec. information
Customer : CATERPILLAR

Engine : 3304

1st version kW : 65.5
Speed 1/min: 1900

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.5

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6,00X1,50X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1,95...2,05
: (1,90...2,10)

Contr.-rod trav.mm: 9,00...12,00

Cam sequence : 1-3-4-2

SD ang. spacing°CS: 0-90-180-270
Tolerance + - : 0,50 (0,75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 950

Contr.-rod trav.mm: 11,65...11,75

Del.quantity cm3/ : 9,0...9,1

100H.: (8,8...9,3)

Dispersion cm3/ : 0,25

100H.: (0,40)

2nd speed 1/min: 350

Contr.-rod trav. m: 6,7...6,9

Del.quantity cm3/ : 0,8...1,3

100H.: (0,6...1,4)

Dispersion cm3/ : 0,20

100H.: (0,35)

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1010

Contr.-rod travelmm: 15,20...17,80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 950

Del.quantity cm3/ : 90,5...91,5

1000H.: (88,5...93,5)

Dispersion cm3/ : 2,5

1000H.: (4,0)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 62...71

Testing:

1st c-rod trav.mm : 10,65

Speed 1/min : 980...990

2nd c-rod trav.mm : 4,00

Speed 1/min : 1055...1085

4th speed 1/min : 1150

C-rod trav.mm : 0,00...1,00

LOWEST RATED SPEED I

Control-lever

position degrees: 15...23

Testing:

Speed 1/min : 250
C-rod trav.mm min : 11,00
Speed 1/min : 350
C-rod trav.mm : 6,30...6,50
C-rod trav.mm : 2,00
Speed 1/min : 540...600

CONSTANT REGULATION

Speed 1/min : 300...400

TORQUE CONTROL

Dimension a mm : 0,80
Torque-control curve - 1st version
1st speed 1/min : 950
C-rod trav.mm : 11,65...11,75
2nd speed 1/min : 800
C-rod trav.mm : 12,00...12,30
3rd speed 1/min : 700
C-rod trav.mm : 12,35...12,55
4th speed 1/min : 500
C-rod trav.mm : 12,45...12,55

SWITCH-OVER POINT

Speed 1/min : 290 (310)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 700
Del.quantity cm³/ : 100,0...102,0
1000H.: (98,0...104,0)
Speed 1/min : 500
Del.quantity cm³/ : 95,5...97,5
1000H.: (93,5...99,5)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 10,65
Speed 1/min : 980...990

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm³/ : 152,0...172,0
1000H.: (-)
Contr.-rod trav.mm: 17,60...18,60

LOW IDLE

Speed 1/min : 350
Contr.-rod trav.mm: 6,30...6,50

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CAT 7,0 A7
Edition : 11.8.87
Superceeded :
Calibrating oil : ISO-4113
Combination no. : 9 400 087 294
Injection pump
Pump designation : PES4P80A720LS440
EP type number : 9 400 087 028
Governor
Governor design. : RQV350...1000PA613-1
Governor no. : 9 420 080 174

Customer-spec. information
Customer : CATERPILLAR

Engine : 3304 NA

1st version kW : 58.8
Speed 1/min: 2000

TEST BENCH REQUIREMENTS

Calibrating-gil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.5

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6,00x1,50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1,95...2,05
: (1,90...2,10)
Contr.-rod trav.mm: 9,00...12,00

Cam sequence : 1-3-4-2

SD ang. spacing^oCS: 0-90-180-270
Tolerance + - : 0,50 (0,75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1000

Contr.-rod trav.mm: 11,60...11,70

Del.quantity cm3/ : 9,0...9,1

100H.: (8,8...9,3)

Dispersion cm3/ : 0,25

100H.: (0,40)

2nd speed 1/min: 350

Contr.-rod trav. m: 6,70...6,90

Del.quantity cm3/ : 0,8...1,2

100H.: (0,7...1,3)

Dispersion cm3/ : 0,20

100H.: (0,35)

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1000

Contr.-rod travelmm: 15,20...17,80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1000

Del.quantity cm3/ : 90,0...91,0

1000H.: (88,0...93,0)

Dispersion cm3/ : 2,5

1000H.: (4,0)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 66...75

Testing:

1st c-rod trav.mm : 10,60

Speed 1/min : 1030...1040

2nd c-rod trav.mm : 4,00

Speed 1/min : 1100...1130

4th speed 1/min : 1180

C-rod trav.mm : -

LOWEST RATED SPEED I

Control-lever

position degrees: 17...25

Testing:

Speed 1/min : 250
C-rod trav.mm min : 11,00
Speed 1/min : 350
C-rod trav.mm : 6,50...6,70
C-rod trav.mm : 2,00
Speed 1/min : 550...610

CONSTANT REGULATION

Speed 1/min : 300...400

TORQUE CONTROL

Dimension a mm : 0,50
Torque-control curve - 1st version
1st speed 1/min : 1000
C-rod trav.mm : 11,60...11,70
2nd speed 1/min : 850
C-rod trav.mm : 11,70...12,00
3rd speed 1/min : 700
C-rod trav.mm : 12,00...12,20
4th speed 1/min : 500
C-rod trav.mm : 12,10...12,20

SWITCH-OVER POINT

Speed 1/min : 290 (310)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 700
Del.quantity cm3/ : 95,0...97,0
1000H.: (92,5...99,5)
Speed 1/min : 500
Del.quantity cm3/ : 90,0...92,0
1000H.: (87,5...94,5)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 10,60
Speed 1/min : 1030...1040

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 152,0...172,0
1000H.: (-)
Contr.-rod trav.mm: 17,60...18,60

LOW IDLE

Speed 1/min : 350
Contr.-rod trav.mm: 6,50...6,70

Remarks:

K01

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CAT 7,0 B
 Edition : 11.8.87
 Superceeded : 11.85
 Calibrating oil : ISO-3114
 Combination no. : 9 400 087 301
 Injection pump
 Pump designation : PES4P80A720LS852
 EP type number : 9 400 087 034
 Governor
 Governor design. : RQV350...1000PA609-1
 Governor no. : 9 420 080 172

Customer-spec. information
 Customer : CATERPILLAR

Engine : 3304 T

1st version kW : 78.7
 Speed 1/min: 2000

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.5

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6,00x1,50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1,65...1,75
 : (1,60...1,80)
 Contr.-rod trav.mm: 9,00...12,00

Cam sequence : 1-3-4-2

SD ang. spacing°CS: 0-90-180-270
 Tolerance + - ° : 0,50 (0,75)

BASIC SETTING

1st speed 1/mi: 1000

 Contr.-rod trav.mm: 12,20...12,30

 Del.quantity cm3/ : 10,6...10,7

 100H.: (10,5...10,9)

 Dispersion cm3/ : 0,25

 100H.: (0,35)

 2nd speed 1/min: 350
 Contr.-rod trav. m: 6,70...6,90
 Del.quantity cm3/ : 0,9...1,6
 100H.: (0,7...1,8)
 Dispersion cm3/ : 0,20
 100H.: (0,30)

SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed 1/min: 1010
 Cont.-rod travelmm: 15,20...17,80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 1000
 Del.quantity cm3/ : 106,5...107,5
 1000H.: (105,0...109,0)
 Dispersion cm3/ : 2,5
 1000H.: (3,5)

HIGHEST RATED SPEED

1st version
 Control-lever
 position degrees: 64...72

Testing:

1st c-rod trav.mm : 11,20
 Speed 1/min : 1030...1040
 2nd c-rod trav.mm : 4,00
 Speed 1/min : 1110...1140
 4th speed 1/min : 1200
 C-rod trav.mm : 0,00...1,00

LOWEST RATED SPEED I

Control-lever
 position degrees: 13...21

Testing:

Speed 1/min : 350
C-rod trav.mm min : 11,50
Speed 1/min : 350
C-rod trav.mm : 6,30...6,50
C-rod trav.mm : 2,00
Speed 1/min : 530...590

CONSTANT REGULATION

Speed 1/min : 320...420

TORQUE CONTROL

Dimension a mm : 1,00
Torque-control curve - 1st version
1st speed 1/min : 1000
C-rod trav.mm : 12,20...12,30
2nd speed 1/min : 850
C-rod trav.mm : 12,70...12,90
3rd speed 1/min : 700
C-rod trav.mm : 13,10...13,30
4th speed 1/min : 500
C-rod trav.mm : 13,20...13,30

SWITCH-OVER POINT

Speed 1/min : 290 (310)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 700
Del.quantity cm3/ : 113,0...115,0
1000H.: (111,0...117,0)
Speed 1/min : 500
Del.quantity cm3/ : 109,0...112,0
1000H.: (107,0...113,0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 11,20
Speed 1/min : 1030...1040

STARTING FUEL DELIVERY

Speed 1/min : 100
Contr.-rod trav.mm: 17,60...18,60

LOW IDLE

Speed 1/min : 350
Contr.-rod trav.mm: 6,30...6,50

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 10,0 E
Edition : 11.8.87
Superceeded : 7.86
Calibrating oil : ISO-4113
Combination no. : 9 400 087 308
Injection pump
Pump designation : PE5P110A720RS479
EP type number : 9 400 087 040
Governor
Governor design. : RQ300/1050PA718-1
Governor no. : 9 420 080 187

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM355-S A

1st version kW : 170
Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.5

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6,00x1,50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3,35...3,45
: (3,30...3,50)
Contr.-rod trav.mm: 9,00...12,00

K04

Cam sequence : 1-2-4-5-3

SD ang. spacing°CS: 0-72-144-216-288
Tolerance + - : 0,50 (0,75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1050

Contr.-rod trav.mm: 12,20...12,30

Del.quantity cm3/ : 16,1...16,3

100H.: (15,8...16,6)

Dispersion cm3/ : 0,40

100H.: (0,75)

2nd speed 1/min: 300
Contr.-rod trav. m: 6,40...6,60
Del.quantity cm3/ : 1,1...1,6
100H.: (-)
Dispersion cm3/ : 0,45
100H.: (0,75)

SLEEVE POSITION

Control-lever position
Degree: 49
Speed 1/min: 600
Contr.-rod travelmm: 19,20...20,80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1050
Charge press. hPa : 700
Del.quantity cm3/ : 161,0...163,0
1000H.: (158,0...166,0)
Dispersion cm3/ : 4,0
1000H.: (7,5)

HIGHEST RATED SPEED

Setting point:
Speed 1/min : 600
Contr.-rod trav.mm: 20,0

Testing:
1st c-rod trav.mm : 11,20
Speed 1/min : 1095...1110
2nd c-rod trav.mm : 4,00
Speed 1/min : 1150...1180
4th speed 1/min : 1300
C-rod trav.mm : 0,00...1,00

LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 300

Contr.-rod trav.mm: 6,50

Testing:

Speed 1/min : 100

C-rod trav.mm min : 8,50

Speed 1/min : 300

C-rod trav.mm : 6,50

C-rod trav.mm : 2,00

Speed 1/min : 390...430

TORQUE CONTROL

Dimension a mm : 0,35

Torque-control curve - 1st version

1st speed 1/min : 1050

C-rod trav.mm : 12,20...12,30

2nd speed 1/min : 600

C-rod trav.mm : 13,10...13,20

3rd speed 1/min : 900

C-rod trav.mm : 12,80...13,00

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 700

Contr.-rod trav.mm: 13,10...13,20

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 10,30...10,40

2nd pressure hPa : 400

C-rod trav.mm : 12,40...12,50

3rd pressure hPa : 250

C-rod trav.mm : 11,10...11,30

SWITCH-OVER POINT

Speed 1/min : 230 (270)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 700

Speed 1/min : 600

Del.quantity cm3/ : 177,0...181,0

1000H.: (174,0...184,0)

Charge press. hPa : 700

Speed 1/min : 900

Del.quantity cm3/ : 174,0...178,0

1000H.: (171,0...181,0)

Charge press. hPa : -

Speed 1/min : 500

K05

Del.quantity cm3/ : 112,5...115,5
1000H.: (110,0...118,0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 11,20

Speed 1/min : 1095...1110

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 150,0...170,0

1000H.: (-)

Contr.-rod trav.mm: 13,30...14,30

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CAT 10,5 D
Edition : 11.8.87
Superceeded : 10.85
Calibrating oil : ISO-4113

Combination no. : 9 400 087 321

Injection pump
Pump designation : PES6P80A720LS456
EP type number : 9 400 087 029
Governor
Governor design. : RQV350...1000PA755
Governor no. : 9 420 080 197

Customer-spec. information
Customer : CATERPILLAR

Engine : 3306 T

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.5

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6,00X1,50X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1,65...1,75
: (1,60...1,80)
Contr.-rod trav.mm: 9,00...12,00
Cam sequence : 1-5-3-6-2-4

SD ang. spacing⁰CS: 0-60-120-180-240-300
Tolerance + - ⁰ : 0,50 (0,75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1000

Contr.-rod trav.mm: 13,10...13,20

Del.quantity cm3/ : 11,8...11,9

100H.: (11,8...12,0)

Dispersion cm3/ : 0,25

100H.: (0,40)

2nd speed 1/min: 350

Contr.-rod trav. m: 6,70...6,90

Del.quantity cm3/ : 0,9...1,6

100H.: (0,8...1,9)

Dispersion cm3/ : 0,20

100H.: (0,35)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 325

Sleeve travel mm: 0,50...2,00

2nd speed 1/min: 400

Sleeve travel mm: 2,70...3,10

3rd speed 1/min: 500

Sleeve travel mm: 3,50...4,20

4th speed 1/min: 800

Sleeve travel mm: 6,10...6,60

5th speed 1/min: 1010

Sleeve travel mm: 8,50...8,60

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1010

Contr.-rod travelmm: 15,20...17,80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1000

Charge press. hPa : 450

Del.quantity cm3/ : 118,5...119,5

1000H.: 118,0...120,0

Dispersion cm3/ : 2,5

1000H.: (4,0)

HIGHEST RATED SPEED

1st version

K07

Control-lever
position degrees: 66...75

Testing:

1st c-rod trav.mm : 12,10

Speed 1/min : 1030...1040

2nd c-rod trav.mm : 4,00

Speed 1/min : 1110...1140

4th speed 1/min : 1230

C-rod trav.mm : 0,00...1,00

LOWEST RATED SPEED I

Control-lever

position degrees: 13...21

Testing:

Speed 1/min : 250

C-rod trav.mm min : 11,00

Speed 1/min : 350

C-rod trav.mm : 5,90...6,10

C-rod trav.mm : 2,00

Speed 1/min : 510...570

CONSTANT REGULATION

Speed 1/min : 300...400

TORQUE CONTROL

Dimension a mm : 1,30

Torque-control curve - 1st version

1st speed 1/min : 1000

C-rod trav.mm : 13,10...13,20

2nd speed 1/min : 600

C-rod trav.mm : 14,40...14,50

3rd speed 1/min : 800

C-rod trav.mm : 13,90...14,10

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 600

Pressure hPa : 450

Contr.-rod trav.mm: 14,40...14,50

Measurement

Speed 1/min : 600

1st pressure hPa : -

C-rod trav.mm : 13,00...13,10

2nd pressure hPa : 270

C-rod trav.mm : 13,80...13,90

SWITCH-OVER POINT

Speed 1/min : 290 (310)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 450

Speed 1/min : 600

Del.quantity cm3/ : 131,0...133,0

1000H.: (129,0...135,0)

Charge press. hPa : 450

Speed 1/min : 800

Del.quantity cm3/ : 127,5...129,5

1000H.: (125,5...131,5)

Charge press. hPa : -

Speed 1/min : 600

Del.quantity cm3/ : 108,5...110,5

1000H.: (106,5...112,5)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 12,10

Speed 1/min : 1030...1040

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 152,0...172,0

1000H.: (-)

Contr.-rod trav.mm: 17,60...18,60

LOW IDLE

Speed 1/min : 350

Contr.-rod trav.mm: 5,90...6,10

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CAT 10,5 A1
Edition : 11.8.87
Superceeded : 10.85
Calibrating oil : ISO-4113

Combination no. : 9 400 087 322

Injection pump
Pump designation : PES6P80A720LS456
EP type number : 9 400 087 029
Governor
Governor design. : RQV350...950PA609-3
Governor no. : 9 420 080 198

Customer-spec. information
Customer : CATERPILLER

Engine : 3306 T

1st version kW : 103.0
Speed 1/min: 1900

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.5

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6,00x1,50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1,65...1,75
: (1,60...1,80)

Contr.-rod trav.mm: 9,00...12,00

Cam sequence : 1-5-3-6-2-4

SD ang. spacing⁰CS: 0-60-120-180-240-300
Tolerance + - : 0,50 (0,75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 950

Contr.-rod trav.mm: 12,20...12,30

Del.quantity cm3/ : 10,5...10,6

100H.: (11,3...11,7)

Dispersion cm3/ : 0,25

100H.: (0,40)

2nd speed 1/min: 350

Contr.-rod trav. m: 6,70...6,90

Del.quantity cm3/ : 0,9...1,6

100H.: (0,7...1,8)

Dispersion cm3/ : 0,20

100H.: (0,35)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 325

Sleeve travel mm: 0,50...2,00

2nd speed 1/min: 400

Sleeve travel mm: 2,70...3,10

3rd speed 1/min: 500

Sleeve travel mm: 3,50...4,20

4th speed 1/min: 800

Sleeve travel mm: 6,10...6,60

5th speed 1/min: 1010

Sleeve travel mm: 8,40...8,60

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1010

Contr.-rod travelmm: 15,20...17,80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 950

Del.quantity cm3/ : 105,0...106,0

1000H.: (113,5...117,5)

Dispersion cm3/ : 2,5

1000H.: (4,0)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 62...71

Testing:

1st c-rod trav.mm : 11,20

Speed 1/min : 980...990

2nd c-rod trav.mm : 4,00

Speed 1/min : 1050...1080

4th speed 1/min : 1150

C-rod trav.mm : 0,00...1,00

LOWEST RATED SPEED I

Control-lever

position degrees: 13...21

Testing:

Speed 1/min : 250

C-rod trav.mm min : 11,00

Speed 1/min : 350

C-rod trav.mm : 5,90...6,10

C-rod trav.mm : 2,00

Speed 1/min : 510...570

CONSTANT REGULATION

Speed 1/min : 300...400

TORQUE CONTROL

Dimension a mm : 0,90

Torque-control curve - 1st version

1st speed 1/min : 950

C-rod trav.mm : 12,20...12,30

2nd speed 1/min : 500

C-rod trav.mm : 13,10...13,20

3rd speed 1/min : 700

C-rod trav.mm : 13,00...13,20

4th speed 1/min : 800

C-rod trav.mm : 12,60...12,90

SWITCH-OVER POINT

Speed 1/min : 290 (310)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 500

Del.quantity cm3/ : 108,0...110,0

1000H.: (107,0...111,0)

Speed 1/min : 700

Del.quantity cm3/ : 111,0...113,0

1000H.: (110,0...114,0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 11,20

Speed 1/min : 980...990

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 152,0...172,0
1000H.: (-)
Contr.-rod trav.mm: 17,60...18,60

LOW IDLE

Speed 1/min : 350
Contr.-rod trav.mm: 5,90...6,10

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CAT 10,5 A2
Edition : 11.8.87
Superceeded : 10.85
Calibrating oil : ISO-4113
Combination no. : 9 400 087 324
Injection pump
Pump designation : PES6P80A720LS456
EP type number : 9 400 087 029
Governor
Governor design. : RQV350...1000PA609-4
Governor no. : 9 420 080 200

Customer-spec. information
Customer : CATERPILLAR

Engine : 3306 T

1st version kW : 121.4
Speed 1/min: 2000

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.5

Calibrating nozzle-holder
assembly : 0 691 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6,00x1,50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1,65...1,75
: (1,60...1,80)

Contr.-rod trav.mm: 9,00...12,00

Cam sequence : 1-5-3-6-2-4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0,50 (0,75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1000

Contr.-rod trav.mm: 13,10...13,20

Del.quantity cm3/ : 12,1...12,2

100H.: (12,1...12,3)

Dispersion cm3/ : 0,25

100H.: (0,40)

2nd speed 1/min: 350

Contr.-rod trav. m: 6,70...6,90

Del.quantity cm3/ : 0,9...1,6

100H.: (0,8...1,9)

Dispersion cm3/ : 0,20

100H.: (0,35)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 325

Sleeve travel mm: 0,50...2,00

2nd speed 1/min: 400

Sleeve travel mm: 2,70...3,10

3rd speed 1/min: 500

Sleeve travel mm: 3,50...4,20

4th speed 1/min: 800

Sleeve travel mm: 6,10...6,60

5th speed 1/min: 1010

Sleeve travel mm: 8,40...8,60

SLEEVE POSITION

Speed 1/min: 1010

Contr.-rod travelmm: 15,20...17,80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1000

Del.quantity cm3/ : 121,5...122,5

1000H.: (121,0...123,0)

Dispersion cm3/ : 2,5

1000H.: (4,0)

HIGHEST RATED SPEED

1st version

K13

Control-lever

position degrees: 66...75

Testing:

1st c-rod trav.mm : 12,10

Speed 1/min : 1030...1040

2nd c-rod trav.mm : 4,00

Speed 1/min : 1110...1140

4th speed 1/min : 1230

C-rod trav.mm : 0,00...1,00

LOWEST RATED SPEED I

Control-lever

position degrees: 13...21

Testing:

Speed 1/min : 250

C-rod trav.mm min : 11,00

Speed 1/min : 350

C-rod trav.mm : 5,90...6,10

C-rod trav.mm : 2,00

Speed 1/min : 510...570

CONSTANT REGULATION

Speed 1/min : 300...400

TORQUE CONTROL

Dimension a mm : 0,90

Torque-control curve - 1st version

1st speed 1/min : 1000

C-rod trav.mm : 13,10...13,20

2nd speed 1/min : 500

C-rod trav.mm : 14,00...14,10

3rd speed 1/min : 700

C-rod trav.mm : 13,90...14,10

4th speed 1/min : 850

C-rod trav.mm : 13,30...13,60

SWITCH-OVER POINT

Speed 1/min : 290 (310)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 500

Del.quantity cm3/ : 122,5...124,5

1000H.: (120,5...126,5)

Speed 1/min : 700

Del.quantity cm3/ : 126,0...128,0

1000H.: (124,0...130,0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 12,10

Speed 1/min : 1030...1040

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 152,0...172,0
1000H.: (-)
Contr.-rod trav.mm: 17,60...18,60

LOW IDLE

Speed 1/min : 350
Contr.-rod trav.mm: 5,90...6,10

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CAT 10,5 A3
Edition : 11.8.87
Superceeded : 1.86
Calibrating oil : ISO-4113

Combination no. : 9 400 087 325

Injection pump
Pump designation : PES6P80A720LS456
EP type number : 9 400 087 029
Governor
Governor design. : RQV350...1000PA609-5
Governor no. : 9 420 080 201

Customer-spec. information
Customer : CATERPILLAR

Engine : 3306 T

1st version kW : 110.4
Speed 1/min: 2000

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.5

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6,00x1,50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1,65...1,75
: (1,60...1,80)

Contr.-rod trav.mm: 9,00...12,00

Cam sequence : 1-5-3-6-2-4

SD ang. spacing⁰CS: 0-60-120-180-240-300
Tolerance + - : 0,50 (0,75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 990

Contr.-rod trav.mm: 12,50...12,60

Del.quantity cm3/ : 11,1...11,2

100H.: (10,9...11,3)

Dispersion cm3/ : 0,20

100H.: (0,35)

2nd speed 1/min: 350

Contr.-rod trav. m: 6,70...6,90

Del.quantity cm3/ : 0,9...1,6

100H.: (-)

Dispersion cm3/ : 0,20

100H.: (0,30)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 325

Sleeve travel mm: 0,50...2,00

2nd speed 1/min: 400

Sleeve travel mm: 2,70...3,10

3rd speed 1/min: 500

Sleeve travel mm: 3,50...4,20

4th speed 1/min: 800

Sleeve travel mm: 6,10...6,60

5th speed 1/min: 1010

Sleeve travel mm: 8,40...8,60

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1010

Contr.-rod travelmm: 15,20...17,80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 990

Del.quantity cm3/ : 111,0...112,0

1000H.: (109,5...113,5)

Dispersion cm3/ : 2,0

1000H.: (3,5)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 65...74

Testing:

1st c-rod trav.mm : 11,50

Speed 1/min : 1020...1030

2nd c-rod trav.mm : 4,00

Speed 1/min : 1090...1120

4th speed 1/min : 1220

C-rod trav.mm : 0,00...1,00

LOWEST RATED SPEED I

Control-lever

position degrees: 13...21

Testing:

Speed 1/min : 250

C-rod trav.mm min : 11,00

Speed 1/min : 350

C-rod trav.mm : 5,90...6,10

C-rod trav.mm : 2,00

Speed 1/min : 510...570

CONSTANT REGULATION

Speed 1/min : 300...400

TORQUE CONTROL

Dimension a mm : 1,00

Torque-control curve - 1st version

1st speed 1/min : 990

C-rod trav.mm : 12,50...12,60

2nd speed 1/min : 500

C-rod trav.mm : 13,50...13,60

3rd speed 1/min : 700

C-rod trav.mm : 13,40...13,60

4th speed 1/min : 850

C-rod trav.mm : 12,80...13,10

SWITCH-OVER POINT

Speed 1/min : 290 (310)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 500

Del.quantity cm3/ : 117,0...119,0

1000H.: (114,0...118,0)

Speed 1/min : 700

Del.quantity cm3/ : 114,5...116,5

1000H.: (113,5...117,5)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 11,50

Speed 1/min : 1020...1030

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 152,0...172,0
1000H.: (-)
Contr.-rod trav.mm: 17,60...18,60

LOW IDLE

Speed 1/min : 350
Contr.-rod trav.mm: 5,90...6,10

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CAT 7,0 B1
Edition : 11.8.87
Superceeded : 10.85
Calibrating oil : ISO-4113

Combination no. : 9 400 087 326

Injection pump
Pump designation : PES4P80A72OLS852
EP type number : 9 400 087 034
Governor
Governor design. : RQV350...1000PA609-5
Governor no. : 9 420 080 201

Customer-spec. information
Customer : CATERPILLAR

Engine : 3304 T

1st version kW : 78.7
Speed 1/min: 2000

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.5

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 1,5

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6,00x1,50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1,65...1,75
: (1,60...1,80)
Contr.-rod trav.mm: 9,00...12,00

Cam sequence : 1-3-4-2

SD ang. spacing^oCS: 0-90-180-270
Tolerance + - : 0,50 (0,75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1000

Contr.-rod trav.mm: 12,20...12,30

Del.quantity cm3/ : 10,6...10,7

100H.: (10,5...10,9)

Dispersion cm3/ : 0,25

100H.: (0,35)

2nd speed 1/min: 350

Contr.-rod trav. m: 6,70...6,90

Del.quantity cm3/ : 0,9...1,6

100H.: (0,7...1,8)

Dispersion cm3/ : 0,20

100H.: (0,30)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 325

Sleeve travel mm: 0,50...2,00

2nd speed 1/min: 400

Sleeve travel mm: 2,70...3,10

3rd speed 1/min: 500

Sleeve travel mm: 3,50...4,20

4th speed 1/min: 800

Sleeve travel mm: 6,10...6,60

5th speed 1/min: 1010

Sleeve travel mm: 8,40...8,60

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1010

Contr.-rod travelmm: 15,20...17,80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1000

Del.quantity cm3/ : 106,5...107,5

1000H.: (105,0...109,0)

Dispersion cm3/ : 2,5

1000H.: (3,5)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 64...72

Testing:

1st c-rod trav.mm : 11,20

Speed 1/min : 1030...1040

2nd c-rod trav.mm : 4,00

Speed 1/min : 1110...1140

4th speed 1/min : 1200

C-rod trav.mm : 0,00...1,00

LOWEST RATED SPEED I

Control-lever

position degrees: 13...21

Testing:

Speed 1/min : 250

C-rod trav.mm min : 11,50

Speed 1/min : 350

C-rod trav.mm : 6,30...6,50

C-rod trav.mm : 2,00

Speed 1/min : 530...590

CONSTANT REGULATION

Speed 1/min : 320...420

TORQUE CONTROL

Dimension a mm : 1,00

Torque-control curve - 1st version

1st speed 1/min : 1000

C-rod trav.mm : 12,20...12,30

2nd speed 1/min : 500

C-rod trav.mm : 13,20...13,30

3rd speed 1/min : 700

C-rod trav.mm : 13,10...13,30

4th speed 1/min : 850

C-rod trav.mm : 12,70...12,90

SWITCH-OVER POINT

Speed 1/min : 290 (310)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 500

Del.quantity cm3/ : 109,0...112,0

1000H.: (107,0...113,0)

Speed 1/min : 700

Del.quantity cm3/ : 113,0...115,0

1000H.: (111,0...117,0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 11,20

Speed 1/min : 1030...1040

STARTING FUEL DELIVERY

Speed 1/min : 100
Contr.-rod trav.mm: 17,60...18,60

LOW IDLE

Speed 1/min : 350
Contr.-rod trav.mm: 6,30...6,50

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CAT 7,0 A1
Edition : 12.8.87
Superceeded : 10.85
Calibrating oil : ISO-4113

Combination no. : 9 400 087 327

Injection pump
Pump designation : PES4P80A720LS440
EP type number : 9 400 087 028
Governor
Governor design. : RQV350...950PA609-6
Governor no. : 9 420 080 202

Customer-spec. information
Customer : CATERPILLAR

Engine : 3304 - NA

1st version kW : 65.5
Speed 1/min: 1900

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.5

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6,00x1,50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 1,95...2,05
: (1,90...2,10)
Contr.-rod trav.mm: 9,00...12,00

Cam sequence : 1-3-4-2

SD ang. spacing^oCS: 0-90-180-270
Tolerance + - : 0,50 (0,75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 950

Contr.-rod trav.mm: 11,65...11,75

Del.quantity cm3/ : 9,0...9,1

100H.: (8,8...9,3)

Dispersion cm3/ : 0,25

100H.: (0,40)

2nd speed 1/min: 350

Contr.-rod trav. m: 6,7...6,9

Del.quantity cm3/ : 0,8...1,3

100H.: (0,6...1,4)

Dispersion cm3/ : 0,20

100H.: (0,35)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 325

Sleeve travel mm: 0,50...2,00

2nd speed 1/min: 400

Sleeve travel mm: 2,70...3,10

3rd speed 1/min: 500

Sleeve travel mm: 3,50...4,20

4th speed 1/min: 800

Sleeve travel mm: 6,10...6,60

5th speed 1/min: 1010

Sleeve travel mm: 8,40...8,60

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1010

Contr.-rod travelmm: 15,20...17,80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 950

Del.quantity cm3/ : 90,5...91,5

1000H.: (88,5...93,5)

Dispersion cm3/ : 2,5

1000H.: (4,0)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 62...71

Testing:

1st c-rod trav.mm : 10,65

Speed 1/min : 980...990

2nd c-rod trav.mm : 4,00

Speed 1/min : 1055...1085

4th speed 1/min : 1150

C-rod trav.mm : 0,00...1,00

LOWEST RATED SPEED I

Control-lever

position degrees: 15...23

Testing:

Speed 1/min : 250

C-rod trav.mm min : 11,00

Speed 1/min : 350

C-rod trav.mm : 6,30...6,50

C-rod trav.mm : 2,00

Speed 1/min : 540...600

CONSTANT REGULATION

Speed 1/min : 300...400

TORQUE CONTROL

Dimension a mm : 0,80

Torque-control curve - 1st version

1st speed 1/min : 950

C-rod trav.mm : 11,65...11,75

2nd speed 1/min : 500

C-rod trav.mm : 12,45...12,55

3rd speed 1/min : 700

C-rod trav.mm : 12,35...12,55

4th speed 1/min : 800

C-rod trav.mm : 12,00...12,30

SWITCH-OVER POINT

Speed 1/min : 290 (310)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 500

Del.quantity cm3/ : 95,5...97,5

1000H.: (93,5...99,5)

Speed 1/min : 700

Del.quantity cm3/ : 100,0...102,0

1000H.: (98,0...104,0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 10,65

Speed 1/min : 980...990

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 152,0...172,0
1000H.: (-)
Contr.-rod trav.mm: 17,60...18,60

LOW IDLE

Speed 1/min : 350
Contr.-rod trav.mm: 6,30...6,50

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CAT 7,0 A2
Edition : 12.8.87
Superceeded : 10.85
Calibrating oil : ISO-4113

Combination no. : 9 400 087 328

Injection pump
Pump designation : PES4P80A720LS440
EP type number : 9 400 087 028
Governor
Governor design. : RQV350...1000PA613-2
Governor no. : 9 420 080 203

Customer-spec. information
Customer : CATERPILLAR

Engine : 3304 NA

1st version kW : 58.8
Speed 1/min: 2000

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.5

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6,00X1,50X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values _ _ _ _

START OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 1,95...2,05
 : (1,90...2,10)
Contr.-rod trav.mm: 9,00...12,00

Cam sequence : 1-3-4-2

SD ang. spacing^oCS: 0-90-180-270
Tolerance + - : 0,50 (0,75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1000

Contr.-rod trav.mm: 11,60...11,70

Del.quantity cm3/ : 9,0...9,1

100H.: (8,8...9,0)

Dispersion cm3/ : 0,25

100H.: (0,40)

2nd speed 1/min: 350

Contr.-rod trav. m: 6,70...6,90

Del.quantity cm3/ : 0,8...1,2
100H.: (0,7...1,3)

Dispersion cm3/ : 0,20

100H.: (0,35)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 325

Sleeve travel mm: 0,50...2,00

2nd speed 1/min: 400

Sleeve travel mm: 2,70...3,10

3rd speed 1/min: 500

Sleeve travel mm: 3,50...4,20

4th speed 1/min: 800

Sleeve travel mm: 6,10...6,60

5th speed 1/min: 1010

Sleeve travel mm: 8,40...8,60

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1000

Contr.-rod travelmm: 15,20...17,80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1000

Del.quantity cm3/ : 90,0...91,0

1000H.: (88,0...93,0)

Dispersion cm3/ : 2,5

1000H.: (4,0)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 66...75

Testing:

1st c-rod trav.mm : 10,60

Speed 1/min : 1030...1040

2nd c-rod trav.mm : 4,00

Speed 1/min : 1100...1130

4th speed 1/min : 1180

C-rod trav.mm : 0,00...1,00

LOWEST RATED SPEED I

Control-lever

position degrees: 17...25

Testing:

Speed 1/min : 250

C-rod trav.mm min : 11,00

Speed 1/min : 350

C-rod trav.mm : 6,50...6,70

C-rod trav.mm : 2,00

Speed 1/min : 550...610

CONSTANT REGULATION

Speed 1/min : 300...400

TORQUE CONTROL

Dimension a mm : 0,50

Torque-control curve - 1st version

1st speed 1/min : 1000

C-rod trav.mm : 11,60...11,70

2nd speed 1/min : 500

C-rod trav.mm : 12,10...12,20

3rd speed 1/min : 700

C-rod trav.mm : 12,00...12,20

4th speed 1/min : 850

C-rod trav.mm : 11,70...12,00

SWITCH-OVER POINT

Speed 1/min : 290 (310)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 500

Del.quantity cm3/ : 90,0...92,0

1000H.: (87,5...94,5)

Speed 1/min : 700

Del.quantity cm3/ : 95,0...97,0

1000H.: (92,5...99,5)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 10,60

Speed 1/min : 1030...1040

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 152,0...172,0
1000H.: (-)
Contr.-rod trav.mm: 17,60...18,60

LOW IDLE

Speed 1/min : 350
Contr.-rod trav.mm: 6,50...6,70

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : FOR 6,6 C
Edition : 12.8.87
Superceeded : 4.86
Calibrating oil : ISO-4113

Combination no. : 9 400 087 334

Injection pump
Pump designation : PES6P110A72ORS3149
EP type number : 9 400 087 045
Governor
Governor design. : RQV350...1300PA772
Governor no. : 9 420 080 209

Customer-spec. information
Customer : FORD (FTO)

Engine : 6,6 L TC

1st version kW : 121.4
Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.5

Calibrating nozzle-holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,6

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6,00x2,00x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 4,25...4,35
 : (4,20...4,40)
Contr.-rod trav.mm: 9,00...12,00
Cam sequence : 1-5-3-6-2-4

SD ang. spacing⁰CS: 0-60-120-180-240-300
Tolerance + - : 0,5 (0,75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1300

Contr.-rod trav.mm: 13,10...13,20

Del.quantity cm3/ : 10,5...10,7

100H.: (10,2...11,0)

Dispersion cm3/ : 0,50

100H.: (0,90)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 350

Sleeve travel mm: 0,60...1,30

2nd speed 1/min: 500

Sleeve travel mm: 2,30...2,70

3rd speed 1/min: 800

Sleeve travel mm: 4,00...4,30

4th speed 1/min: 1000

Sleeve travel mm: 5,00...5,30

5th speed 1/min: 1300

Sleeve travel mm: 7,20...7,30

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1350

Contr.-rod travelmm: 15,20...17,80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1300

Charge press. hPa : 1000

Del.quantity cm3/ : 105,0...107,0

1000H.: (102,0...110,0)

Dispersion cm3/ : 5,0

1000H.: (9,0)

HIGHEST RATED SPEED

1st version

Control-lever
position degrees: 61...69

Testing:

1st c-rod trav.mm : 12,10

Speed 1/min : 1360...1370

2nd c-rod trav.mm : 4,00

Speed 1/min : 1505...1535

4th speed 1/min : 1650

C-rod trav.mm : 0,00...1,00

LOWEST RATED SPEED I

Control-lever

position degrees: 9...17

Testing:

Speed 1/min : 100

C-rod trav.mm min : 9,00

Speed 1/min : 350

C-rod trav.mm : 7,20...7,40

C-rod trav.mm : 2,00

Speed 1/min : 600...660

CONSTANT REGULATION

Speed 1/min : 370...440

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 1000

Contr.-rod trav.mm: 13,10...13,20

Measurement

Speed 1/min : 500

1st pressure hPa : (-)

C-rod trav.mm : 11,60...11,70

2nd pressure hPa : 700

C-rod trav.mm : 12,70...12,80

3rd pressure hPa : 500

C-rod trav.mm : 12,00...12,20

SWITCH-OVER POINT

Speed 1/min : 290 (310)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 1000

Speed 1/min : 800

Del.quantity cm3/ : 102,0...106,0

1000H.: (100,0...108,0)

Charge press. hPa : (-)

Speed 1/min : 500

Del.quantity cm3/ : 76,5...78,5
1000H.: (73,5...81,5)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 12,10
Speed 1/min : 1360...1370

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 100,0...120,0
1000H.: (96,0...124,0)
Contr.-rod trav.mm: 20,00...21,00

LOW IDLE

Speed 1/min : 350
Contr.-rod trav.mm: 7,20...7,40
Del.quantity cm3/ : 16,0...20,0
1000H.: (13,5...22,5)
Dispersion cm3/ : 3,5
1000H.: (5,5)
Set shutoff stop 1.5...2.0 mm before
shutoff.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : FOR 7,8 B
 Edition : 12.8.87
 Superceeded : 10.85
 Calibrating oil : ISO-4113
 Combination no. : 9 400 087 338
 Injection pump
 Pump designation : PES6P110A720RS3151
 EP type number : 9 400 087 047
 Governor
 Governor design. : RQV350...1300PA777
 Governor no. : 9 420 080 211

Customer-spec. information
 Customer : FORD (FT0)

Engine : 7,8 L-TC

1st version kW : 165.6
 Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.5

Calibrating nozzle-holder
 assembly : 1 688 901 017

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0,6

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6,00X1,50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4,25...4,35
 : (4,20...4,40)
 Contr.-rod trav.mm: 9,00...12,00
 Cam sequence : 1-5-3-6-2-4

SD ang. spacing°CS: 0-60-120-180-240-300
 Tolerance + - ° : 0,50 (0,75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1300

Contr.-rod trav.mm: 14,10...14,20

Del.quantity cm3/ : 14,4...14,6

100H.: (14,2...14,8)

Dispersion cm3/ : 0,50

100H.: (0,90)

(B) Setting of injection pump with
 externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 350
 Sleeve travel mm: 0,60...1,30

2nd speed 1/min: 500
 Sleeve travel mm: 2,30...2,70

3rd speed 1/min: 800
 Sleeve travel mm: 4,00...4,30

4th speed 1/min: 1000
 Sleeve travel mm: 5,00...5,30

5th speed 1/min: 1300
 Sleeve travel mm: 7,20...7,30

SLEEVE POSITION
 Control-lever position
 Degree: -1

Speed 1/min: 1350

Contr.-rod travelmm: 15,20...17,80

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1350

Contr.-rod travelmm: 15,20...17,80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1300

Charge press. hPa : 800

Del.quantity cm3/ : 144,5...146,5

1000H.: (142,5...148,5)

Dispersion cm3/ : 5,0

1000H.: (9,0)

HIGHEST RATED SPEED

1st version

Control-lever
position degrees: 61...69

Testing:

1st c-rod trav.mm : 13,10
Speed 1/min : 1360...1370
2nd c-rod trav.mm : 4,00
Speed 1/min : 1510...1540
4th speed 1/min : 1630
C-rod trav.mm : 0,00...1,00

LOWEST RATED SPEED I

Control-lever
position degrees: 11...19

Testing:

Speed 1/min : 100
C-rod trav.mm min : 9,00
Speed 1/min : 350
C-rod trav.mm : 7,40...7,60
C-rod trav.mm : 2,00
Speed 1/min : 620...680

CONSTANT REGULATION

Speed 1/min : 370...440

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500
Pressure hPa : 800
Contr.-rod trav.mm: 13,80...13,90

Measurement

Speed 1/min : 500

1st pressure hPa : (-)
C-rod trav.mm : 12,10...12,20
2nd pressure hPa : 580
C-rod trav.mm : 13,70...13,80
3rd pressure hPa : 390
C-rod trav.mm : 12,60...12,80

SWITCH-OVER POINT

Speed 1/min : 290 (310)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 800
Speed 1/min : 800
Del.quantity cm3/ : 119,0...123,0
1000H.: (117,0...125,0)
Charge press. hPa : -
Speed 1/min : 500

Del.quantity cm3/ : 73,0...75,0
1000H.: (70,0...78,0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 13,10
Speed 1/min : 1360...1370

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 150,0...170,0
1000H.: (146,0...174,0)
Contr.-rod trav.mm: 20,0...21,0

LOW IDLE

Speed 1/min : 350
Contr.-rod trav.mm: 7,40...7,60
Del.quantity cm3/ : 16,0...20,0
1000H.: (13,5...22,5)
Dispersion cm3/ : 3,5
1000H.: (5,5)
Set shutoff stop 1.5...2.0 mm before
shutoff.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet	: CAT 10,5 J
Edition	: 24.07.87
Superceeded	: -
Calibrating oil	: ISO-4113
Combination no.	: 9 400 087 348
Injection pump	
Pump designation	: PES6P100A720LS508
EP type number	: 9 400 087 053
Governor	
Governor design.	: RQV350...87SPA798-6
Governer no.	: 9 420 080 236

Customer-spec. information
Customer : CATERPILLAR

Engine : 3306 DINA

1st version kW : 87.2
Speed 1/min: 1750

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 9 401 087 348

Inlet press., bar : 2.00

Calibrating nozzle-holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0.6

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values

START OF DELIVERY
Test pressure, bar: 2...3

```

Prestroke mm      : 3.95...4.05
                   : (3.90...4.10)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence      : 1- 5- 3- 6- 2- 4

```

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + -^o: 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 875

Contr.-rod trav.mm: 8.80...8.90

Del.quantity cm3/ : 7.1...7.3

100H.: (6.9...7.5)

Dispersion cm³/ : 0.3

100H.: (0.6)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 6.7...6.9

Del.quantity cm3/ : 1.0...1.4
100H.: (0.7...1.6)

Dispersion cm³/ : 0.3
100H.: (0.5)

(B) Setting of injection pump with externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 350
Sleeve travel mm: 1.90...2.70

2nd speed 1/min: 450
Sleeve travel mm: 3.80...4.20

3rd speed 1/min: 650
Sleeve travel mm: 5.60...6.00

4th speed 1/min: 920
Sleeve travel mm: 8.50...8.60

SLEEVE POSITION

Control-lever position
Degree: -1

Speed 17min: 950
Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 875
Del.quantity cm3/ : 71.5...73.5
1000H.: (69.5...75.5)
Dispersion cm3/ : 3.50
1000H.: (6.90)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 61...69

Testing:

1st c-rod trav.mm : 7.80

Speed 1/min : 910...920

2nd c-rod trav.mm : 4.00

Speed 1/min : 950...980

4th speed 1/min : 1050

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 11...19

Testing:

Speed 1/min : 100

C-rod trav.mm min : 8.00

Speed 1/min : 350

C-rod trav.mm : 5.10...5.30

C-rod trav.mm : 2.00

Speed 1/min : 420...480

CONSTANT REGULATION

Speed 1/min : 350...420

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 875

C-rod trav.mm : 8.80...8.90

2nd speed 1/min : 600

C-rod trav.mm : 9.50...8.60

3rd speed 1/min : 700

C-rod trav.mm : 9.20...9.40

4th speed 1/min : 750

C-rod trav.mm : 9.00...9.30

SWITCH-OVER POINT

Speed 1/min : 290 (310)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600

Del.quantity cm3/ : 70.0...74.0

1000H.: (68.0...76.0)

Dispersion cm3/ : 5.00

1000H.: (7.00)

Speed 1/min : 750

Del.quantity cm3/ : 70.5...74.5

1000H.: (68.5...76.5)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 7.80

LOS

Speed 1/min : 910...920

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 195.0...215.0

1000H.: (191.0...219.0)

Contr.-rod trav.mm: 14.00...15.00

LOW IDLE

Speed 1/min : 350

Contr.-rod trav.mm: 5.10...5.30

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CAT 10,5 I
 Edition : 24.07.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 9 400 087 356
 Injection pump
 Pump designation : PES6P100A720LS511
 EP type number : 9 400 087 059
 Governor
 Governor design. : RQV350/840...900
 PA839
 Governor no. : 9 420 080 233

Customer-spec. information
 Customer : CATERPILLAR

Engine : 3306 DIT

1st version kW : 190.0
 Speed 1/min: 1800

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 9 401 087 348

Inlet press., bar : 2.00

Calibrating nozzle-holder
 assembly : 1 688 901 017

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0.6

Test inj. tubing : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values _ _ _ _

START OF DELIVERY

Test pressure, bar: 2...3

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing⁰CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 900

Contr.-rod trav.mm: 12.60...12.70

Del.quantity cm3/ : 18.2...18.4

100H.: (18.0...18.7)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 6.4...6.6

Del.quantity cm3/ : 1.3...1.7

100H.: (1.0...1.9)

Dispersion cm3/ : 0.3

100H.: (0.5)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 350

Sleeve travel mm: 0.50...1.50

2nd speed 1/min: 500

Sleeve travel mm: 2.40...2.60

3rd speed 1/min: 750

Sleeve travel mm: 2.40...2.60

4th speed 1/min: 850

Sleeve travel mm: 4.00...4.50

5th speed 1/min: 950

Sleeve travel mm: 8.50...8.60

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 925

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 900

L07

Del.quantity cm3/ : 182.5...184.5
1000H.: (180.0...187.0)
Dispersion cm3/ : 3.50
1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 57...65

Testing:

1st c-rod trav.mm : 11.60

Speed 1/min : 910...920

2nd c-rod trav.mm : 4.00

Speed 1/min : 930...960

4th speed 1/min : 1050

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 5...13

Testing:

Speed 1/min : 100

C-rod trav.mm min : 7.00

Speed 1/min : 350

C-rod trav.mm : 4.70...4.90

C-rod trav.mm : 2.00

Speed 1/min : 770...830

SWITCH-OVER POINT

Speed 1/min : 290 (310)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 11.60

Speed 1/min : 910...920

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 195.0...215.0

1000H.: (191.0...219.0)

Contr.-rod trav.mm: 14.00...15.00

LOW IDLE

Speed 1/min : 350

Contr.-rod trav.mm: 4.70...4.90

Remarks:

C-rod trav.mm min : 16,00
Speed 1/min : 400
C-rod trav.mm : 5,10...5,30
C-rod trav.mm : 2,00
Speed 1/min : 565...625
Speed 1/min : 800
C-rod trav.mm max : 1,00

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1050
C-rod trav.mm : 9,95...10,05
2nd speed 1/min : 750
C-rod trav.mm : 10,85...11,15
3rd speed 1/min : 550
C-rod trav.mm : 9,45...9,55

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500
Pressure hPa : 390
Contr.-rod trav.mm: 10,65...10,75

Measurement

Speed 1/min : 500

1st pressure hPa : 280
C-rod trav.mm : 9,70...9,90

SWITCH-OVER POINT

Speed 1/min : 400...700

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 670
Speed 1/min : 750
Del.quantity cm3/ : 163,5...166,5
1000H.: (-)
Charge press. hPa : -
Speed 1/min : 550
Del.quantity cm3/ : 130,0...134,0
1000H.: (-)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 9,00
Speed 1/min : 1095...1105

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 180,0...200,0
1000H.: (-)

HIGH IDLE

Speed 1/min : 1155
Del.quantity cm3/ : 37,0...47,0
1000H.: (-)

LOW IDLE

Speed 1/min : 400
Contr.-rod trav.mm: 22,0...28,0
Del.quantity cm3/ : (-)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 11,0 V8
Edition : 12.8.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 9 400 087 373

Injection pump
Pump designation : PE6P120A720RS7004
EP type number : 0 412 626 801
Governor
Governor design. : RSV350...1050P1/481
Governor no. : 9 420 082 322

Customer-spec. information
Customer : SCANIA

Engine : DS11

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.5

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6,00x1,50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 5,00...5,10
 : (4,95...5,15)
Contr.-rod trav.mm: 9,00...12,00

Cam sequence : 1-5-3-6-2-4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0,5 (0,75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1050

Contr.-rod trav.mm: 12,80...12,90

Del.quantity cm3/ : 21,5...21,7

1000H.: (21,2...22,0)

Dispersion cm3/ : 0,60

1000H.: (0,90)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Contr.-rod travelmm: 0,30...1,40

Governor-spring reload

Notch setting x : 6,0

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1050

Del.quantity cm3/ : 212,5...217,5

1000H.: (212,5...220,5)

Dispersion cm3/ : 6,0

1000H.: (9,0)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 50...58

Testing:

1st c-rod trav.mm : 11,80

Speed 1/min : 1090...1100

2nd c-rod trav.mm : 4,00

Speed 1/min : 1170...1200

4th speed 1/min : 1250

C-rod trav.mm : 0,30...1,70

LOWEST RATED SPEED I

Control-lever

position degrees: 20...28

Setting point w/out aux. spring

Speed 1/min : 350

Contr.-rod trav.mm: 5,00

Speed 1/min : 350

C-rod trav.mm : 5,50

C-rod trav.mm : 2,00

Speed 1/min : 420...480

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 500

Del.quantity cm3/ : 208,0...220,0

1000H.: (206,0...222,0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 11,80

Speed 1/min : 1090...1100

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 240,0...290,0

1000H.: (-)

Contr.-rod trav.mm: 20,00...21,00

LOW IDLE

Speed 1/min : 350

Contr.-rod trav.mm: 5,40...5,60

Del.quantity cm3/ : 12,0...18,0

1000H.: (9,0...21,0)

Dispersion cm3/ : 8,0

1000H.: (12,0)

Remarks:

Delivery-valve spring pre-tension
3.2...3.4 mm.

Permissible alteration of 3.0...3.5 mm
Because of flattening, set the spring
preload on new delivery-valve holders
to 2.9...3.1 mm.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 6,1 A4
 Edition : 12.8.87
 Superseded : 12.85
 Calibrating oil : ISO-4113
 Combination no. : 9 400 093 227
 Injection pump
 Pump designation : PES6A85D410RS2415
 EP type number : 9 400 093 006
 Governor
 Governor design. : RSV325...1150A1B
 1111L
 Governor no. : 9 420 C92 009

Customer-spec. information
 Customer : DEUTZ ARG.

Engine : BF6L913

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.0

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 003

Outside diameter
 x Wall thickness
 x Length mm : 6,00X2,00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1,90...2,00
 : (1,85...2,05)

Contr.-rod trav.mm: 9,00...12,00

Cam sequence : 1-5-3-6-2-4

SD ang. spacing°CS: 0-60-120-180-240-300
 Tolerance + - : 0,5 (0,75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1150

Contr.-rod trav.mm: 11,30...11,40

Del.quantity cm3/ : 7,2...7,3

100H.: (7,0...7,5)

Dispersion cm3/ : 0,30

100H.: (0,50)

2nd speed 1/min: 325

Contr.-rod trav. m: 7,90...8,10

Del.quantity cm3/ : 0,9...1,3

100H.: (0,7...1,5)

Dispersion cm3/ : 0,25

100H.: (0,45)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Contr.-rod travelmm: 0,30...1,00

Governor-spring reload

Notch setting x : 5,0

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1150

Del.quantity cm3/ : 7,2...7,3

100H.: (7,0...7,5)

Dispersion cm3/ : 3,0

100H.: (5,0)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 56...64

Testing:

1st c-rod trav.mm : 10,30

Speed 1/min : 1190...1200

2nd c-rod trav.mm : 4,00

Speed 1/min : 1220...1250

4th speed 1/min : 1350

C-rod trav.mm : 0,30...1,70

LOWEST RATED SPEED I

Control-lever
position degrees: 23...31
Setting point w/out aux. spring
Speed 1/min : 325
Contr.-rod trav.mm: 7,50

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19,00
Speed 1/min : 325
C-rod trav.mm : 8,00
C-rod trav.mm : 2,00
Speed 1/min : 540...610

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 1150
C-rod trav.mm : 11,30...11,40
2nd speed 1/min : 500
C-rod trav.mm : 13,00...13,10
3rd speed 1/min : 800
C-rod trav.mm : 12,20...12,50

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 500
Del.quantity cm3/ : 78,5...80,5
1000H.: (76,0...83,0)
Speed 1/min : 800
Del.quantity cm3/ : 75,5...77,5
1000H.: (73,0...80,0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 10,30
Speed 1/min : 1190...1200

STARTING FUEL DELIVERY

Speed 1/min : 100
Contr.-rod trav.mm: 19,00...21,00

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DEE 7,6 V
Edition : 17.8.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 9 400 230 007
Injection pump
Pump designation : PES6A95D41ORS2560
Governor
Governor design. : RSV400...1100A7B
2044L

Customer-spec. information
Customer : JOHN DEERE

Engine : 6466 T

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42
Overflow valve : 1 413 385 007

Inlet press., bar : 1.5

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6,00X2,00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Prestroke mm : 1,85...1,95
: (1,80...2,00)
Cam sequence : 1-5-3-6-2-4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - : 0,50 (0,75)

BASIC SETTING

1st speed 1/mi: 1080

Contr.-rod trav.mm: 10,20

Del.quantity cm3/ : 9,5...9,7

100H.: (-)

Dispersion cm3/ : 0,30

100H.: (-)

2nd speed 1/min: 400
Contr.-rod trav. m: 5,80
Del.quantity cm3/ : 1,2...1,6
100H.: (-)

SLEEVE POSITION

Control-lever position
Degree: -3
Speed 1/min: 800
Contr.-rod travelmm: 0,30...0,70

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1080
Del.quantity cm3/ : 95,0...97,0
1000H.: (93,0...99,0)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 66...74

Testing:
1st c-rod trav.mm : 9,20
Speed 1/min : 1115...1125
2nd c-rod trav.mm : 5,00
Speed 1/min : 1145
4th speed 1/min : 1200
C-rod trav.mm : 0,30...1,70

LOWEST RATED SPEED I

Control-lever
position degrees: 17...25
Setting point w/out aux. spring
Speed 1/min : 400
Contr.-rod trav.mm: 5,80

Testing:
Speed 1/min : 100
C-rod trav.mm min : 19,00
Speed 1/min : 400
C-rod trav.mm : 5,70...5,90
C-rod trav.mm : 2,00
Speed 1/min : 520...580

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1100
C-rod trav.mm : 0,00...0,10
2nd speed 1/min : 750
C-rod trav.mm : 0,00...0,20
3rd speed 1/min : 450
C-rod trav.mm : 0,70...1,30

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 9,20
Speed 1/min : 1115...1125

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 165,0...185,0
1000H.: (-)

HIGH IDLE

Speed 1/min : 1145
Del.quantity cm3/ : 23,0...33,0
1000H.: (-)

LOW IDLE

Speed 1/min : 400
Del.quantity cm3/ : 12,0...16,0

Remarks:

: JOHN DEERE
: NO. AR 88752

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : IHC 9,0 G
Edition : 17.8.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 9 400 230 036
Injection pump
Pump designation : PES8A95D32ORS2619
Governor
Governor design. : RQV325...1600AB1143R

Customer-spec. information
Customer : IHC

Engine : D 9 L

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 40...45

Overflow valve : 1 417 413 019

Inlet press., bar : 2.5

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6,00x2,00x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Prestroke mm : 2,95...3,05
: (2,90...3,10)
Contr.-rod trav.mm: 10,50
Cam sequence : 1-8-7-3-6-5-4-2

SD ang. spacing°CS: 0-45-90-135-180-225-

Tolerance + - ° : 270-315
: 0,50 (0,75)

BASIC SETTING

1st speed 1/mi: 1600

Contr.-rod trav.mm: 12,80

Del.quantity cm3/ : 8,9...9,1

100H.: (-)

Dispersion cm3/ : 0,3

100H.: (-)

2nd speed 1/min: 325

Contr.-rod trav. m: 7,60

Del.quantity cm3/ : 0,9...1,5

100H.: (-)

Dispersion cm3/ : 0,3

100H.: (-)

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1600

Del.quantity cm3/ : 89,0...91,0

1000H.: (-)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 63,5...71,5

Testing:

1st c-rod trav.mm : 11,80

Speed 1/min : 1640...1650

2nd c-rod trav.mm : 4,00

Speed 1/min : 1820...1850

4th speed 1/min : 1925

C-rod trav.mm : 0,00...1,00

LOWEST RATED SPEED I

Control-lever

position degrees: 8...16

Testing:

Speed 1/min : 100

C-rod trav.mm min : 8,50

Speed 1/min : 325

C-rod trav.mm : 7,50...7,70

C-rod trav.mm : 2,00

Speed 1/min : 855...915

Speed 1/min : 100

C-rod trav.mm max : 9,30

CONSTANT REGULATION

Speed 1/min : 370....450

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1600

C-rod trav.mm : 12,70...12,90

2nd speed 1/min : 100

C-rod trav.mm : 12,70...12,90

SWITCH-OVER POINT

Speed 1/min : 210 (270)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 1000

Del.quantity cm3/ : 86,0

1000H.: (-)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 11,80

Speed 1/min : 1640...1650

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 78,0...98,0

1000H.: (-)

Contr.-rod trav.mm: 14,20

HIGH IDLE

Speed 1/min : 1835

Dispersion cm3/ : 4,0

1000H.: (-)

LOW IDLE

Speed 1/min : 325

Del.quantity cm3/ : 9,0...15,0

1000H.: (-)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : IHC 9,4 A3
Edition : 17.8.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 9 400 231 057
Injection pump
Pump designation : PES8P100A921/SRS286
Governor
Governor design. : RQV400...1250PAS41K

Customer-spec. information
Customer : IHC

Engine : DVT 800

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 40...45

Overflow valve : 1 417 413 040

Inlet press., bar : 2.8

Calibrating nozzle-holder
assembly : 1 688 901 017

Opening
pressure, bar : 207

Test inj. tubing : 9 681 230 713

Outside diameter
x Wall thickness
x Length mm : 6,35X2,10X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Prestroke mm : 2,75...2,85
: (2,70...2,90)
Contr.-rod trav.mm: 10,50
Cam sequence : 1-8-4-2-7-3-6-5

SD ang. spacing°CS: 0-45-90-135-180-225-

Tolerance + - ° : 270-315
: 0,50 (0,75)

BASIC SETTING

1st speed 1/mi: 1250

Contr.-rod trav.mm: 10,30

Del.quantity cm3/ : 11,4...11,6

100H.: (-)

Dispersion cm3/ : 0,4

100H.: (-)

2nd speed 1/min: 400

Contr.-rod trav. m: 4,90

Del.quantity cm3/ : 1,8...2,2

100H.: (-)

Dispersion cm3/ : 0,5

100H.: (-)

SLEEVE POSITION

Control-lever position
Degree: 60...66

Speed 1/min: 1320

Contr.-rod travelmm: 15,50...17,50

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1250

Charge press. hPa : 1060

Del.quantity cm3/ : 114,0...116,0

1000H.: (112,0...118,0)

HIGHEST RATED SPEED

1st version

Control-lever
position degrees: 55...61

Testing:

1st c-rod trav.mm : 9,30

Speed 1/min : 1300...1310

2nd c-rod trav.mm : 4,00

Speed 1/min : 1385...1415

4th speed 1/min : 1640

C-rod trav.mm : 0,00...1,00

LOWEST RATED SPEED I

Control-lever
position degrees: 10...16

Testing:

Speed 1/min : 200

C-rod trav.mm min : 7,10

Speed 1/min : 400

C-rod trav.mm : 4,80...5,00

C-rod trav.mm : 2,00
Speed 1/min : 565...625

CONSTANT REGULATION

Speed 1/min : 420...480

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1250

C-rod trav.mm : 10,25...10,35

2nd speed 1/min : 900

C-rod trav.mm : 11,25...11,35

3rd speed 1/min : 700

C-rod trav.mm : 10,45...10,55

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 800

Pressure hPa : 145

Contr.-rod trav.mm: 8,90...9,10

Measurement

Speed 1/min : 800

1st pressure hPa : 365

C-rod trav.mm : 9,70...9,90

SWITCH-OVER POINT

Speed 1/min : 240 (300)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 1060

Speed 1/min : 900

Del.quantity cm3/ : 121,0...127,0

1000H.: (120,0...128,0)

Charge press. hPa : -

Speed 1/min : 800

Del.quantity cm3/ : 85,5...93,5

1000H.: (85,5...94,5)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 9,30

Speed 1/min : 1300...1310

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 188,0...228,0

1000H.: (-)

Contr.-rod trav.mm: 20,50

LOW IDLE

Speed 1/min : 400

Del.quantity cm3/ : 18,0...22,0

1000H.: (-)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 2,4 V7
Edition : 09.03.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 400 074 909

Injection pump
Pump designation : PES4M55C320RS107-2
EP type number : 0 410 054 962
Governor
Governor design. : RSF375/1900M18-4
Governor no. : 0 420 021 096

Customer-spec. information
Customer : DB

Engine : OM616 (2.4 L)

1st version kW : 53.0

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 012

Inlet press., bar : 1.00

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 30...32

Prestroke mm : 2.20...2.30
: (2.15...2.35)

Contr.-rod trav.mm: 20.00...0.00
Cam sequence : 1- 3- 4- 2

SD ang. spacing^oCS: 0-90-180-270
Tolerance + - : 0.00 (1.00)

BASIC SETTING

1st speed 1/mi: 1000

Contr.-rod trav.mm: 13.00...13.10

Del.quantity cm3/ : 3.7...3.8

100H.: (3.6...3.9)

Dispersion cm3/ : 0.2

100H.: (0.3)

2nd speed 1/min: 375.0
Contr.-rod trav. m: 6.1...6.3
Del.quantity cm3/ : 0.6...0.7
100H.: (0.5...0.9)
Dispersion cm3/ : 0.1
100H.: (0.1)

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1000
Del.quantity cm3/ : 37.5...38.5
1000H.: (36.5...39.5)
Dispersion cm3/ : 2.50
1000H.: (3.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 50...0
3rd c-rod trav.mm : 7.80...8.20
Speed 1/min : 0...2150
4th speed 1/min : 2950
C-rod trav.mm : 0.00...1.00

SET IDLE CONTROL-LEVER

POSITION
Speed 1/min : 1000
Contr.-rod trav.mm: 1.4...1.5

LOWEST RATED SPEED I

Control-lever
position degrees: 9...13
Setting point w/out aux. spring
Speed 1/min : 375
Contr.-rod trav.mm: 6.2

Testing:

Speed 1/min : 250
C-rod trav.mm min : 10.50

Speed 1/min : 375
C-rod trav.mm : 6.10...6.30
C-rod trav.mm : 2.00
Speed 1/min : 720...820
Speed 1/min : 1000
C-rod trav.mm max : 1.50

SET IDLE AUXILIARY SPRING

Speed 1/min : 450
Contr.-rod trav.mm: 4.9...5.1
: (4.8...5.2)

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 1000
C-rod trav.mm : 13.00...13.10
2nd speed 1/min : 1800
C-rod trav.mm : 12.00...12.20

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 1800
Del.quantity cm3/ : 37.5...39.5
1000H.: (36.5...40.5)
Dispersion cm3/ : 2.50
1000H.: (3.00)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 53.0
1000H.: (53.0)
Contr.-rod trav.mm: 20.10

HIGH IDLE

Speed 1/min : 2150
Contr.-rod trav.mm: 7.80...8.20
Del.quantity cm3/ : 18.5...22.5
1000H.: (17.5...23.5)
Dispersion cm3/ : 2.50
1000H.: (3.00)

LOW IDLE

Speed 1/min : 375
Contr.-rod trav.mm: 6.10...6.30
Del.quantity cm3/ : 6.0...7.0
1000H.: (5.5...9.0)
Dispersion cm3/ : 1.00
1000H.: (1.50)

Remarks:

CHECKING THE IDLE-SPEED AUXILIARY SPRING CUTOFF

-Control-lever position 47°. No change in control-rod travel after switchover point up to 550 1/min,

control-lever position 30° . Speed
range 350 1/min...450 1/min.

TESTING PNEUMATIC SHUTOFF DEVICE

-Control lever at idle stop.

With $n = 375$ 1/min. and $p_u = 450$ mbar,
control rod must move quickly to
control-rod travel = 0 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 2,0 P12
Edition : 10.04.87
Superceeded :
Calibrating oil : ISO-4113

Combination no. : 0 400 074 911

Injection pump
Pump designation : PES4M55C320RS163
EP type number : 0 410 054 961
Governor
Governor design. : RSF360/2300M60-6
Governor no. : 0 420 021 091

Customer-spec. information
Customer : DB

Engine : OM601 (2.0)

1st version kW : 52.0

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 469 990 351

Inlet press., bar : 1.00

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 1.70...1.80
: (1.65...1.85)
Contr.-rod trav.mm: 20.00...22.00
Cam sequence : 1- 3- 4- 2

SD ang. spacing^oCS: 0-90-180-270
Tolerance + - : 0.00 (1.00)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1000

Contr.-rod trav.mm: 11.10...11.20

Del.quantity cm3/ : 3.0...3.1
100H.: (2.9...3.2)

Dispersion cm3/ : 0.2
100H.: (0.3)

2nd speed 1/min: 335.0
Contr.-rod trav. m: 5.0...5.2
Del.quantity cm3/ : 0.5...0.6
100H.: (0.4...0.9)
Dispersion cm3/ : 0.1
100H.: (0.1)

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1000
Charge press. hPa : 1100
Del.quantity cm3/ : 30.5...31.5
1000H.: (29.5...32.5)
Dispersion cm3/ : 2.50
1000H.: (3.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 50...0
3rd c-rod trav.mm : 6.80...7.20
Speed 1/min : 0...2500
4th speed 1/min : 2950
C-rod trav.mm : 0.00...1.00

SET IDLE CONTROL-LEVER POSITION

Speed 1/min : 1000
Contr.-rod trav.mm: 1.9...2.0

LOWEST RATED SPEED I

Control-lever
position degrees: 10...14
Setting point w/out aux. spring
Speed 1/min : 335
Contr.-rod trav.mm: 5.1

Testing:

Speed 1/min : 250
C-rod trav.mm min : 8.50
Speed 1/min : 335
C-rod trav.mm : 5.00...5.20
C-rod trav.mm : 2.50
Speed 1/min : 1000
C-rod trav.mm max : 2.00

SET IDLE AUXILIARY SPRING

Speed 1/min : 400
Contr.-rod trav.mm: 3.80...4.00
: (3.70...4.10)

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 1000
C-rod trav.mm : 11.10...11.20
2nd speed 1/min : 1800
C-rod trav.mm : 10.50...10.70
3rd speed 1/min : 2200
C-rod trav.mm : 10.00...10.20

Measurement

Speed 1/min : 1000
1st pressure hPa : 900
C-rod trav.mm : 0.50...0.70
2nd pressure hPa : 750
C-rod trav.mm : 1.80...2.20

FUEL-DELIVERY CHARACTERISTICS

1st version
Charge press. hPa : 1100
Speed 1/min : 1800
Del.quantity cm3/ : 33.5...35.0
1000H.: (32.5...36.0)
Dispersion cm3/ : 2.50
1000H.: (3.00)
Charge press. hPa : 1100
Speed 1/min : 2200
Del.quantity cm3/ : 31.0...33.0
1000H.: (30.0...34.0)
Dispersion cm3/ : 2.50
1000H.: 3.00

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 55.0
1000H.: (55.0)
Contr.-rod trav.mm: 20.10

HIGH IDLE

1st version

Charge press. hPa : 1100
Speed 1/min : 2500
Contr.-rod trav.mm: 6.80...7.20
Del.quantity cm³/ : 16.0...20.0
1000H.: (15.0...21.0)
Dispersion cm³/ : 2.50
1000H.: (3.00)

LOW IDLE

Speed 1/min : 335
Contr.-rod trav.mm: 5.00...5.20
Del.quantity cm³/ : 5.0...6.0
1000H.: (4.5...9.0)
Dispersion cm³/ : 1.00
1000H.: (1.50)

Remarks:

CHECKING THE IDLE-SPEED AUXILIARY SPRING CUTOFF

-Control-lever position 49°, max.
0.2 mm control-rod travel deduction
allowable after switchover point (of
starting cam) up to 1000 1/min.
Control-lever position 46.5°,
control-rod travel deduction must be
greater than 0.2 mm after switchover
point (of starting cam).

START-OF-DELIVERY ADJUSTMENT

-Start-of delivery adjustment and lock
after start-of-delivery mean value of
all cylinders, 17.3...17.7°
(17.2...17.8°) angular displacement of
the cam after cylinder 1.

TESTING PNEUMATIC SHUTOFF DEVICE

-Control lever at idle stop.
With n = 335 1/min. and p_u = 450 mbar,
control rod must move quickly to
control-rod travel = 0 mm

Start-of-delivery spacing (difference)
between max/min value 1° cam angle
maximum,

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 2,5 F6
Edition : 02.06.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 400 075 959

Injection pump
Pump designation : PES5M55C320RS166
EP type number : 0 410 055 980
Governor
Governor design. : RSF340/2300M64-1
Governor no. : 0 420 021 050

Customer-spec. information
Customer : DB

Engine : OM602A

1st version kW : 92.0

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 469 990 351

Inlet press., bar : 1.00

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 1.70...1.80
: (1.65...1.85)

Contr.-rod trav.mm: 20.00...22.00

Cam sequence : 1- 2- 4- 5- 3

SD ang. spacing⁰CS: 0-72-144-216-288
Tolerance + - : 0.00 (1.00)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1000

Contr.-rod trav.mm: 14.00...14.10

Del.quantity cm3/ : 5.1...5.2

100H.: (5.0...5.3)

Dispersion cm3/ : 0.2

100H.: (0.3)

2nd speed 1/min: 315.0

Contr.-rod trav. m: 4.9...5.1

Del.quantity cm3/ : 0.5...0.6

100H.: (0.4...0.8)

Dispersion cm3/ : 0.1

100H.: (0.15)

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1000

Charge press. hPa : 1850

Del.quantity cm3/ : 51.0...52.0

1000H.: (50.0...53.0)

Dispersion cm3/ : 2.50

1000H.: (3.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 50...0

3rd c-rod trav.mm : 8,10...8,50

Speed 1/min : 0...2500

4th speed 1/min : 2950

C-rod trav.mm : 0.00...1.00

SET IDLE CONTROL-LEVER

POSITION

Speed 1/min : 1000

Contr.-rod trav.mm: 1,7...1,8

LOWEST RATED SPEED 1

Control-lever

position degrees: 8...12

Setting point w/out aux. spring

Speed 1/min : 315

Contr.-rod trav.mm: 5.0

Testing:

Speed 1/min : 220

C-rod trav.mm min : 8.00

Speed 1/min : 315

C-rod trav.mm : 4.90...5.10

C-rod trav.mm : 2.50

Speed 1/min : 525...625

Speed 1/min : 1000

C-rod trav.mm max : 1.80

SET IDLE AUXILIARY SPRING

Speed 1/min : 380

Contr.-rod trav.mm: 4,2...4,4
: (4,1...4,5)

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1000

C-rod trav.mm : 14.00...14.10

2nd speed 1/min : 1600

C-rod trav.mm : 13.30...13.50

3rd speed 1/min : 2200

C-rod trav.mm : 12.80...13.00

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 1000

Pressure hPa : 1600

Contr.-rod trav.mm: 0.50...0.90

Measurement

Speed 1/min : 1000

1st pressure hPa : 1050

C-rod trav.mm : 3.90...4.10

2nd pressure hPa : 750

C-rod trav.mm : 5.80...6.20

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 1850

Speed 1/min : 1600

Del.quantity cm3/ : 50.0...51.5

1000H.: (49.0...52.5)

Dispersion cm3/ : 2.50

1000H.: (3.00)

Charge press. hPa : 1850

Speed 1/min : 2200

Del.quantity cm3/ : 48.5...50.5

1000H.: (47.5...51.5)

Dispersion cm3/ : 2.50

1000H.: 3.00

Charge press. hPa : 1050

Speed 1/min : 1000

Del. quantity cm³/ : 33.0...34.0
1000H.: (32.0...35.0)
Dispersion cm³/ : 2.50
1000H.: 3.00

STARTING FUEL DELIVERY

Speed 1/min : 100
Del. quantity cm³/ : 52.0...0.0
1000H.: (52.0...0.0)
Contr.-rod trav.mm: 20.10...0.00

HIGH IDLE

1st version
Charge press. hPa : 1850
Speed 1/min : 2500
Contr.-rod trav.mm: 8.10...8.50
Del. quantity cm³/ : 31.0...35.0
1000H.: (30.0...36.0)
Dispersion cm³/ : 2.50
1000H.: (3.00)

LOW IDLE

Speed 1/min : 315
Contr.-rod trav.mm: 4.90...5.10
Del. quantity cm³/ : 5.0...6.0
1000H.: (4.0...8.5)
Dispersion cm³/ : 1.00
1000H.: (1.50)

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

Control lever at idle stop
Speed 1/min : 340
Contr.-rod trav.mm: 12,4...13,8
Del. quantity cm³/ : 41,0...49,0
1000H.: -
Electric current A: 1,8
Control lever at full-load stop
Speed 1/min : 2950
Contr.-rod trav.mm: 0...1,0
Electric current
short-duration A : 3,0
Starting test
Speed 1/min : 100
Del. quantity cm³/ : -
min. 1000H.: 55,0

Remarks:

CHECKING THE IDLE-SPEED AUXILIARY SPRING CUTOFF

-Control-lever position 49°, max.
0.2 mm control-rod travel deduction allowable after switchover point (of starting cam) up to 1000 1/min.
Control-lever position 46.5°

control-rod travel deduction must be greater than 0.2 mm after switchover point (of starting cam).

SETTING OF FBG

-Setting and locking of FBG according to start-of-delivery average of all cylinders 19.3...19.7° (19.2...19.8°).
Cam angle according to cyl. 1.

Start-of-delivery spacing (difference) between max/min value 1° cam angle maximum.

TESTING PNEUMATIC SHUTOFF DEVICE

-Control lever at idle stop.
With n = 315 1/min. and p_u = 450 mbar, control rod must move quickly to control-rod travel = 0 mm

Testing and adjusting the control-rod-travel sensor with evaluation circuit R2.1.3

Receiving inspection

Shift control lever to full-load stop.
Set 13.5 V at stabilizer. Apply 1850 hPa to ALDA. Run up to speed of 1000 1/min; a voltage of 3.230...3.310 (3.190...3.350) V must be displayed on the digital voltmeter.
Adjustment of the control-rod-travel sensor

At a speed of 1000 1/min, set fuel delivery at 23.0...24.0 (22.0...25.0) ccm/1000 strokes with control lever. Shift control-rod-travel sensor until U = 2.095...2.105 (2.098...2.102) V is indicated. Tighten fastening screws with 1...2 Nm. Control lever to full-load stop; voltage value of 3.230...3.310 V must be attained.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 2,5 F3
Edition : 07.11.86
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 400 075 966
Injection pump
Pump designation : PESSM55C32ORS158
EP type number : 0 410 055 986
Governor
Governor design. : RSF340/2300M64-11
Governer no. : 0 420 021 086

Customer-spec. information
Customer : DB

Engine : OM602A

1st version kW : 92.0

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 469 990 351

Inlet press., bar : 1.00

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 2.20...2.30
: (2.15...2.35)

Contr.-rod trav.mm: 20.00...22.00

Cam sequence : 1- 2- 4- 5- 3

SD ang. spacing°CS: 0-72-144-216-288
Tolerance + - ° : 0.00 (1.00)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1000

Contr.-rod trav.mm: 13.90...14.00

Del.quantity cm3/ : 5.1...5.2

100H.: (5.0...5.3)

Dispersion cm3/ : 0.2

100H.: (0.3)

2nd speed 1/min: 315.0

Contr.-rod trav. m: 5.4...5.6

Del.quantity cm3/ : 0.5...0.6

100H.: (0.4...0.9)

Dispersion cm3/ : 0.1

100H.: (0.1)

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1000

Charge press. hPa : 1850

Del.quantity cm3/ : 51.0...52.0

1000H.: (50.0...53.0)

Dispersion cm3/ : 2.50

1000H.: (3.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 50...0

3rd c-rod trav.mm : 8,10...8,5

Speed 1/min : 2500

4th speed 1/min : 2950

C-rod trav.mm : 0.00...1.00

SET IDLE CONTROL-LEVER

POSITION

Speed 1/min : 1000

Contr.-rod trav.mm: 1,7...1,8

LOWEST RATED SPEED I

Control-lever

position degrees: 8...12

Setting point w/out aux. spring

Speed 1/min : 315

Contr.-rod trav.mm: 5.5

Testing:

Speed 1/min : 220
C-rod trav.mm min : 8.00
Speed 1/min : 315
C-rod trav.mm : 5.40...5.60
C-rod trav.mm : 2.50
Speed 1/min : 540...640
Speed 1/min : 1000
C-rod trav.mm max : 1.80

SET IDLE AUXILIARY SPRING

Speed 1/min : 380
Contr.-rod trav.mm: 4,20...4,40
 : (4,10...4,50)

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1000
C-rod trav.mm : 13.90...14.00
2nd speed 1/min : 1600
C-rod trav.mm : 13.20...13.40
3rd speed 1/min : 2200
C-rod trav.mm : 12.30...12.50

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 1000
Pressure hPa : 1600
Contr.-rod trav.mm: 0.50...0.90

Measurement

Speed 1/min : 1000
1st pressure hPa : 1050
C-rod trav.mm : 3.90...4.10
2nd pressure hPa : 750
C-rod trav.mm : 5.80...6.20

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 1850
Speed 1/min : 1600
Del.quantity cm3/ : 50.0...51.5
 1000H.: (49.0...52.5)
Dispersion cm3/ : 2.50
 1000H.: (3.00)
Charge press. hPa : 1850
Speed 1/min : 2200
Del.quantity cm3/ : 48.5...50.5
 1000H.: (47.5...51.5)
Dispersion cm3/ : 2.50
 1000H.: 3.00
Charge press. hPa : 1050
Speed 1/min : 1000

Del.quantity cm3/ : 33.0...34.0
 1000H.: (32.0...35.0)
Dispersion cm3/ : 2.50
 1000H.: 3.00

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 52.0...0.0
 1000H.: (52.0...0.0)
Contr.-rod trav.mm: 20.10...0.00

HIGH IDLE

1st version

Charge press. hPa : 1850
Speed 1/min : 2500
Contr.-rod trav.mm: 8.10...8.50
Del.quantity cm3/ : 29.0...33.0
 1000H.: (28.0...34.0)
Dispersion cm3/ : 2.50
 1000H.: (3.00)

LOW IDLE

Speed 1/min : 315
Contr.-rod trav.mm: 5.40...5.60
Del.quantity cm3/ : 5.5...6.5
 1000H.: (4.5...9.0)
Dispersion cm3/ : 1.00
 1000H.: (1.50)

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

Control lever at idle stop
Speed 1/min : 340
Contr.-rod trav.mm: 12,4...13,8
Del.quantity cm3/ : -
 1000H.: (41,0...49,0)
Electric current A: 1,8
Control lever at full-load stop
Speed 1/min : 2950
Contr.-rod trav.mm: 0,0...1,0
Electric current
short-duration A : 3,0
Starting test
Speed 1/min : 100
Del.quantity cm3/ : -
min. 1000H.: 55,0

Remarks:

SETTING OF FBG

-Setting and locking of FBG according to start-of-delivery average of all cylinders 19.3...19.7° (19.2...19.8°).
Cam angle according to cyl. 1.

Start-of-delivery spacing (difference)
between max/min value 1° cam angle
maximum.

CHECKING THE IDLE-SPEED AUXILIARY SPRING CUTOFF

-Control-lever position 49°, max.
0.2 mm control-rod travel deduction
allowable after switchover point (of
starting cam) up to 1000 1/min.
Control-lever position 46.5°,
control-rod travel deduction must be
greater than 0.2 mm after switchover
point (of starting cam).

TESTING PNEUMATIC SHUTOFF DEVICE

-Control lever at idle stop.
With $n = 315$ 1/min. and $p_u = 450$ mbar,
control rod must move quickly to
control-rod travel = 0 mm

Testing and adjusting the control-rod-
travel sensor with evaluation circuit
R2.1.3

Receiving inspection

Shift control lever to full-load stop.
Set 13.5 V at stabilizer. Apply
1850 hPa to ALDA. Run up to speed of
1000 1/min; a voltage of 3.230...3.310
(3.190...3.350) V must be displayed
on the digital voltmeter.

Adjustment of the control-rod travel
sensor

At a speed of 1000 1/min, set fuel
delivery at 23.0...24.0 (22.0...25.0)
ccm/1000 strokes with control lever.
Shift control-rod-travel sensor until
 $U = 2.095...2.105$ (2.098...2.102) V is
indicated. Tighten fastening screws
with 1...2 Nm. Control lever to full-
load stop; voltage value of 3.230...
3.310 V must be attained.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 2,5 G1
Edition : 03.04.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 400 075 980
Injection pump
Pump designation : PES5M55C320RS158
EP type number : 0 410 055 986
Governor
Governor design. : RSF340/2300M64-1
Governor no. : 0 420 021 050

Customer-spec. information
Customer : DB

Engine : OM602A

1st version kW : 92.0

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 469 990 351

Inlet press., bar : 1.00

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 2.10...2.20
: (2.05...2.25)

Contr.-rod trav.mm: 20.00...22.00

Cam sequence : 1- 2- 4- 5- 3

MO6

SD ang. spacing°CS: 0-72-144-216-288
Tolerance + - : 0.00 (1.00)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1000

Contr.-rod trav.mm: 13.90...14.00

Del.quantity cm3/ : 5.1...5.2

100H.: (5.0...5.3)

Dispersion cm3/ : 0.2

100H.: (0.3)

2nd speed 1/min: 315.0

Contr.-rod trav. m: 5.4...5.6

Del.quantity cm3/ : 0.5...0.6

100H.: (0.4...0.9)

Dispersion cm3/ : 0.1

100H.: (0.1)

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1000

Charge press. hPa : 1850

Del.quantity cm3/ : 51.0...52.0

1000H.: (50.0...53.0)

Dispersion cm3/ : 2.50

1000H.: (3.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 50...0

3rd c-rod trav.mm: 8,10...8,50

Speed 1/min : 2500

4th speed 1/min : 2950

C-rod trav.mm : 0.00...1.00

SET IDLE CONTROL-LEVER

POSITION

Speed 1/min : 1000

Contr.-rod trav.mm: 1,7...1,8

LOWEST RATED SPEED I

Control-lever

position degrees: 8...12

Setting point w/out aux. spring

Speed 1/min : 315

Contr.-rod trav.mm: 5.5

Testing:

Speed 1/min : 220
C-rod trav.mm min : 8.00
Speed 1/min : 315
C-rod trav.mm : 5.40...5.60
C-rod trav.mm : 2.50
Speed 1/min : 540...640
Speed 1/min : 1000
C-rod trav.mm max : 1.80

SET IDLE AUXILIARY SPRING

Speed 1/min : 380
Contr.-rod trav.mm: 4,20...4,40
 : (4,10...4,50)

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1000
C-rod trav.mm : 13.90...14.00
2nd speed 1/min : 1600
C-rod trav.mm : 13.20...13.40
3rd speed 1/min : 2200
C-rod trav.mm : 12.30...12.50

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 1000
Pressure hPa : 1600
Contr.-rod trav.mm: 0.50...0.90

Measurement

Speed 1/min : 1000
1st pressure hPa : 1050
C-rod trav.mm : 3.90...4.10
2nd pressure hPa : 750
C-rod trav.mm : 5.80...6.20

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 1850
Speed 1/min : 1600
Del.quantity cm3/ : 50.0...51.5
 1000H.: (49.0...52.5)
Dispersion cm3/ : 2.50
 1000H.: (3.00)
Charge press. hPa : 1850
Speed 1/min : 2200
Del.quantity cm3/ : 48.5...50.5
 1000H.: (47.5...51.5)
Dispersion cm3/ : 2.50
 1000H.: 3.00
Charge press. hPa : 1050
Speed 1/min : 1000

Del.quantity cm3/ : 33.0...34.0
 1000H.: (32.0...35.0)
Dispersion cm3/ : 2.50
 1000H.: 3.00

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 52.0...0.0
 1000H.: (52.0...0.0)
Contr.-rod trav.mm: 20.10...0.00

HIGH IDLE

1st version

Charge press. hPa : 1850
Speed 1/min : 2500
Contr.-rod trav.mm: 8.10...8.50
Del.quantity cm3/ : 29.0...33.0
 1000H.: (28.0...34.0)
Dispersion cm3/ : 2.50
 1000H.: (3.00)

LOW IDLE

Speed 1/min : 315
Contr.-rod trav.mm: 5.40...5.60
Del.quantity cm3/ : 5.5...6.5
 1000H.: (4.5...9.0)
Dispersion cm3/ : 1.00
 1000H.: (1.50)

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

Control lever at idle stop

Speed 1/min : 340
Contr.-rod trav.mm: (12,4...13,8)
Del.quantity cm3/ : (41,0...49,0)
 1000H.: -

Electric current A: 1,8

Control lever at full-load stop

Speed 1/min : 2950
Contr.-rod trav.mm: (0,0...1,0)

Electric current

short-duration A : 3,0

Starting test

Speed 1/min : 100
Del.quantity cm3/ : -
min. 1000H.: 52,0

Remarks:

SETTING OF FBG

-Setting and locking of FBG according to start-of-delivery average of all cylinders 19.3...19.7° (19.2...19.8°).
Cam angle according to cyl. 1.

Start-of-delivery spacing (difference)
between max/min value 1° cam angle
maximum.

CHECKING THE IDLE-SPEED AUXILIARY SPRING CUTOFF

- Control-lever position 49° , max.
0.2 mm control-rod travel deduction
allowable after switchover point (of
starting cam) up to 1000 1/min.
Control-lever position 46.5° ,
control-rod travel deduction must be
greater than 0.2 mm after switchover
point (of starting cam).

TESTING PNEUMATIC SHUTOFF DEVICE

- Control lever at idle stop.
With $n = 315$ 1/min. and $p_u = 450$ mbar,
control rod must move quickly to
control-rod travel = 0 mm

Testing and adjusting the control-rod-
travel sensor with evaluation circuit
R2.1.3

Receiving inspection

Shift control lever to full-load stop.
Set 13.5 V at stabilizer. Apply
1850 hPa to ALDA. Run up to speed of
1000 1/min; a voltage of 3.230...3.310
(3.190...3.350) V must be displayed
on the digital voltmeter.

Adjustment of the control-rod travel sensor

At a speed of 1000 1/min, set fuel
delivery at 23.0...24.0 (22.0...25.0)
ccm/1000 strokes with control lever.
Shift control-rod-travel sensor until
 $U = 2.095...2.105$ (2.098...2.102) V is
indicated. Tighten fastening screws
with 1...2 Nm. Control lever to full-
load stop; voltage value of 3.230...
3.310 V must be attained.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 3,0 W13
Edition : 07.11.86
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 400 076 980
Injection pump
Pump designation : PES6M55C32ORS157
EP type number : 0 410 056 993
Governor
Governor design. : RSF315/2300M64-10
Governor no. : 0 420 021 085

Customer-spec. information
Customer : DB

Engine : OM603A

1st version kW : 110.0

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 469 990 351

Inlet press., bar : 1.00

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar : 30...32

Prestroke mm : 2.20...2.30
: (2.15...2.35)

Contr.-rod trav.mm: 20.00...22.00

Cam sequence : 1- 5- 3- 6- 2- 4

MO9

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - : 0.00 (1.00)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1000

Contr.-rod trav.mm: 13.90...14.00

Del.quantity cm3/ : 5.1...5.2

100H.: (5.0...5.3)

Dispersion cm3/ : 0.2

100H.: (0.3)

2nd speed 1/min: 290.0

Contr.-rod trav. m: 5.3...5.5

Del.quantity cm3/ : 0.5...0.6

100H.: (0.5...0.9)

Dispersion cm3/ : 0.1

100H.: (0.1)

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1000

Charge press. hPa : 1850

Del.quantity cm3/ : 51.0...52.0

1000H.: (50.0...53.0)

Dispersion cm3/ : 2.50

1000H.: (3.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 50...0

3rd c-rod trav.mm : 8,10...8,50

Speed 1/min : 2500

4th speed 1/min : 2950

C-rod trav.mm : 0.00...1.00

SET IDLE CONTROL-LEVER

POSITION

Speed 1/min : 1000

Contr.-rod trav.mm: 1,7...1,8

LOWEST RATED SPEED I

Control-lever

position degrees: 8...12

Setting point w/out aux. spring

Speed 1/min : 290

Contr.-rod trav.mm: 5.4

Testing:

Speed 1/min : 200
C-rod trav.mm min : 7.00
Speed 1/min : 290
C-rod trav.mm : 5.30...5.50
C-rod trav.mm : 2.50
Speed 1/min : 510...610
Speed 1/min : 1000
C-rod trav.mm max : 1.80

SET IDLE AUXILIARY SPRING

Speed 1/min : 360
Contr.-rod trav.mm: 4,20...4,40
 : (4,10...4,50)

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1000
C-rod trav.mm : 13.90...14.00
2nd speed 1/min : 1600
C-rod trav.mm : 13.20...13.40
3rd speed 1/min : 2200
C-rod trav.mm : 12.30...12.50

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 1000
Pressure hPa : 1600
Contr.-rod trav.mm: 0.50...0.90

Measurement

Speed 1/min : 1000
1st pressure hPa : 1050
C-rod trav.mm : 3.90...4.10
2nd pressure hPa : 750
C-rod trav.mm : 5.80...6.20

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 1850
Speed 1/min : 1600
Del.quantity cm3/ : 50.0...51.5
 1000H.: (49.0...52.5)
Dispersion cm3/ : 2.50
 1000H.: (3.00)
Charge press. hPa : 1850
Speed 1/min : 2200
Del.quantity cm3/ : 48.5...50.5
 1000H.: (47.5...51.5)
Dispersion cm3/ : 2.50
 1000H.: 3.00
Charge press. hPa : 1050
Speed 1/min : 1000

Del.quantity cm3/ : 33.0...34.0
 1000H.: (32.0...35.0)
Dispersion cm3/ : 2.50
 1000H.: 3.00

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 52.0...0.0
 1000H.: (52.0...0.0)
Contr.-rod trav.mm: 20.10...0.00

HIGH IDLE

1st version

Charge press. hPa : 1850
Speed 1/min : 2500
Contr.-rod trav.mm: 8.10...8.50
Del.quantity cm3/ : 29.0...33.0
 1000H.: (28.0...34.0)
Dispersion cm3/ : 2.50
 1000H.: (3.00)

LOW IDLE

Speed 1/min : 290
Contr.-rod trav.mm: 5.30...5.50
Del.quantity cm3/ : 5.5...6.5
 1000H.: (5.0...9.5)
Dispersion cm3/ : 1.00
 1000H.: (1.50)

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

Control lever at idle stop
Speed 1/min : 315
Contr.-rod trav.mm: (12,8...14,2)
Del.quantity cm3/ : -
 1000H.: (42,0...49,0)
Electric current A: 1,8
Control lever at full-load stop
Speed 1/min : 2950
Contr.-rod trav.mm: (0,0...1,0)
Electric current
short-duration A : 3,0
Starting test
Speed 1/min : 100
Del.quantity cm3/ : -
min. 1000H.: 52,0

Remarks:

SETTING OF FBG

-Setting and locking of FBG according to start-of-delivery average of all cylinders 19.3...19.7° (19.2...19.8°).
Cam angle according to cyl. 1.

Start-of-delivery spacing (difference)
between max/min value 1° cam angle
maximum.

CHECKING THE PNEUMATIC SHUTOFF BOX

-Control lever up against idle stop.
At $n = 290$ 1/min and $p_u = 450$ mbar
control rod must move briskly to
control-rod travel = 0 mm

CHECKING THE IDLE-SPEED AUXILIARY SPRING CUTOFF

-Control-lever position 49° , max.
0.2 mm control-rod travel deduction
allowable after switchover point (of
starting cam) up to 1000 1/min.
Control-lever position 46.5° ,
control-rod travel deduction must be
greater than 0.2 mm after switchover
point (of starting cam).

Testing and adjusting the control-rod- travel sensor with evaluation circuit R2.1.3

Receiving inspection

Shift control lever to full-load stop.
Set 13.5 V at stabilizer. Apply
1850 hPa to ALDA. Run up to speed of
1000 1/min; a voltage of 3.230...3.310
(3.190...3.350) V must be displayed
on the digital voltmeter.

Adjustment of the control-rod travel sensor

At a speed of 1000 1/min, set fuel
delivery at 23.0...24.0 (22.0...25.0)
ccm/1000 strokes with control lever.
Shift control-rod-travel sensor until
 $U = 2.095...2.105$ (2.098...2.102) V is
indicated. Tighten fastening screws
with 1...2 Nm. Control lever to full-
load stop; voltage value of 3.230...
3.310 V must be attained.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 8,0 M 2
Edition : 12.09.86
Superceeded : 9.64
Calibrating oil : ISO-4113

Combination no. : 0 400 246 090

Injection pump
Pump designation : PE6A75D320RS1035Z
EP type number : 0 410 276 967
Governor
Governor design. : RQ250/1150AB143DR
Governor no. : 0 420 203 034

Customer-spec. information
Customer : KHD

Engine : F6L613

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00
 : (1.85...2.05)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 6- 3- 5- 2- 4

SD ang. spacing°CS: 0-75-120-195-240-315
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1130

Contr.-rod trav.mm: 13.40...13.50

Del.quantity cm3/ : 7.1...7.2

100H.: (6.9...7.3)

Dispersion cm3/ : 0.2

100H.: (0.3)

2nd speed 1/min: 250.0
Contr.-rod trav. m: 5.9...6.1

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 500
Contr.-rod travelmm: 15.60...16.40

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1130
Del.quantity cm3/ : 71.0...72.0
1000H.: (69.5...73.5)
Dispersion cm3/ : 2.00
1000H.: (3.50)

HIGHEST RATED SPEED

Setting point:
Speed 1/min : 500
Contr.-rod trav.mm: 16.0

Testing:
1st c-rod trav.mm : 12.40
Speed 1/min : 1175...1190
2nd c-rod trav.mm : 4.00
Speed 1/min : 1210...1240
4th speed 1/min : 1400
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Setting point w/out aux. spring
Speed 1/min : 250
Contr.-rod trav.mm: 6.0

Testing:
Speed 1/min : 100
C-rod trav.mm min : 7.50

Speed 1/min : 250
C-rod trav.mm : 5.90...6.10
C-rod trav.mm : 2.00
Speed 1/min : 285...325

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1130
C-rod trav.mm : 13.40...13.50
2nd speed 1/min : 600
C-rod trav.mm : 14.60...14.70
3rd speed 1/min : 790
C-rod trav.mm : 14.40...14.60
4th speed 1/min : 1020
C-rod trav.mm : 13.60...13.90

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600
Del.quantity cm3/ : 76.5...78.5
1000H.: (75.0...80.0)
Speed 1/min : 1000
Del.quantity cm3/ : 73.5...75.5
1000H.: (72.0...77.0)

SETTING CONTROL-ROD STOP

Speed 1/min : 600

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 12.40
Speed 1/min : 1175...1190

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 4.0 A 5
 Edition : 27.03.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 400 844 092
 Injection pump
 Pump designation : PES4A90D410RS2666-2
 EP type number : 0 410 894 033
 Governor
 Governor design. : RQV300...1300AB1065-13L
 Governor no. : 0 420 212 208

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM364

1st version kW : 64.0
 Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.25...2.35
 : (2.20...2.40)

Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 1- 3- 4- 2

SD ang. spacing°CS: 0-90-180-270
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1300

Contr.-rod trav.mm: 10.50...10.60

Del.quantity cm3/ : 6.2...6.3

100H.: (6.0...6.5)

Dispersion cm3/ : 0.3

100H.: (0.5)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 8.0...8.6

Del.quantity cm3/ : 1.0...1.2

100H.: (0.8...1.4)

Dispersion cm3/ : 0.2

100H.: (0.4)

(B) Setting of injection pump with
 externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 0.80...1.30

2nd speed 1/min: 500

Sleeve travel mm: 2.30...2.80

3rd speed 1/min: 750

Sleeve travel mm: 4.10...4.30

4th speed 1/min: 1500

Sleeve travel mm: 8.50...8.60

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1500

Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1300

Del.quantity cm3/ : 62.0...63.0

1000H.: (60.0...65.0)

Dispersion cm3/ : 3.00

1000H.: (5.00)

HIGHEST RATED SPEED

1st version

Control-lever
position degrees: 107...115

Testing:

1st c-rod trav.mm : 9.50
Speed 1/min : 1340...1350
2nd c-rod trav.mm : 4.00
Speed 1/min : 1450...1480
4th speed 1/min : 1600
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 69...77

Testing:

Speed 1/min : 100
C-rod trav.mm min : 9.80
Speed 1/min : 300
C-rod trav.mm : 8.20...8.40
C-rod trav.mm : 2.00
Speed 1/min : 550...610

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1300
C-rod trav.mm : 10.50...10.60
2nd speed 1/min : 750
C-rod trav.mm : 11.50...11.60
3rd speed 1/min : 1000
C-rod trav.mm : 11.10...11.30
4th speed 1/min : 1100
C-rod trav.mm : 10.70...11.00

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 750
Del.quantity cm3/ : 55.0...58.0
1000H.: (52.5...60.5)
Speed 1/min : 1000
Del.quantity cm3/ : 57.0...60.0
1000H.: (54.5...62.5)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 9.50
Speed 1/min : 1340...1350

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 78.0...88.0
1000H.: (75.0...91.0)

Contr.-rod trav.mm: 16.00...16.40

LOW IDLE

Speed 1/min : 300
Contr.-rod trav.mm: 8.00...8.60
Del.quantity cm3/ : 10.0...12.0
1000H.: (8.0...14.0)
Dispersion cm3/ : 2.50
1000H.: (4.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 4,0 A 6
 Edition : 27.03.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 400 844 093
 Injection pump
 Pump designation : PES4A90D41ORS2666-2
 EP type number : 0 410 894 033
 Governor
 Governor design. : RQV300...1300AB1065-14L
 Governor no. : 0 420 212 209

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM364

1st version kW : 64.0
 Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.25...2.35
 : (2.20...2.40)

Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 3- 4- 2

SD ang. spacing^oCS: 0-90-180-270
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1300

Contr.-rod trav.mm: 10.50...10.60

Del.quantity cm3/ : 6.2...6.3

100H.: (6.0...6.5)

Dispersion cm3/ : 0.3

100H.: (0.5)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 8.0...8.6

Del.quantity cm3/ : 1.0...1.2

100H.: (0.8...1.4)

Dispersion cm3/ : 0.2

100H.: (0.4)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 0.80...1.30

2nd speed 1/min: 500

Sleeve travel mm: 2.30...2.80

3rd speed 1/min: 750

Sleeve travel mm: 4.10...4.30

4th speed 1/min: 1500

Sleeve travel mm: 8.50...8.60

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1500

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1300

Del.quantity cm3/ : 62.0...63.0

1000H.: (60.0...65.0)

Dispersion cm3/ : 3.00

1000H.: (5.00)

HIGHEST RATED SPEED

1st version

Control-lever
position degrees: 106...114

Testing:

1st c-rod trav.mm : 9.50

Speed 1/min : 1340...1350

2nd c-rod trav.mm : 4.00

Speed 1/min : 1450...1480

4th speed 1/min : 1600

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 71...79

Testing:

Speed 1/min : 100

C-rod trav.mm min : 9.80

Speed 1/min : 300

C-rod trav.mm : 8.20...8.40

C-rod trav.mm : 2.00

Speed 1/min : 540...600

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1300

C-rod trav.mm : 10.50...10.60

2nd speed 1/min : 750

C-rod trav.mm : 11.50...11.60

3rd speed 1/min : 1000

C-rod trav.mm : 11.10...11.30

4th speed 1/min : 1100

C-rod trav.mm : 10.70...11.00

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 750

Del.quantity cm3/ : 55.0...58.0

1000H.: (52.5...60.5)

Speed 1/min : 1000

Del.quantity cm3/ : 57.0...60.0

1000H.: (54.5...62.5)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 9.50

Speed 1/min : 1340...1350

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 78.0...88.0

1000H.: (75.0...91.0)

Contr.-rod trav.mm: 16.00...16.40

LOW IDLE

Speed 1/min : 300

Contr.-rod trav.mm: 8.00...8.60

Del.quantity cm3/ : 10.0...12.0

1000H.: (8.0...14.0)

Dispersion cm3/ : 2.50

1000H.: (4.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MAN 9,2 F 1
Edition : 28.08.87
Superceeded : 11.85
Calibrating oil : ISO-4113

Combination no. : 0 400 845 079

Injection pump
Pump designation : PES5A95D320LS2504
EP type number : 0 410 895 984
Governor
Governor design. : RQ250/1100AB1197R
Governor no. : 0 420 201 639

Customer-spec. information
Customer : MAN

Engine : D2565 MUL

1st version kW : 141.0
Speed 1/min: 2200

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 003

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 1.50...1.60
 : (1.45...1.65)
Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 3- 5- 4- 2

SD ang. spacing^oCS: 0-72-144-216-288
Tolerance + - ^o : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1100

Contr.-rod trav.mm: 11.30...11.40

Del.quantity cm3/ : 11.4...11.6

100H.: (11.2...11.8)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 6.4...6.6

Del.quantity cm3/ : 1.5...2.1

100H.: (1.2...2.3)

Dispersion cm3/ : 0.3

100H.: (0.5)

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 600

Contr.-rod travelmm: 15.60...16.40

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1100

Del.quantity cm3/ : 114.0...116.0

1000H.: (112.0...118.0)

Dispersion cm3/ : 3.00

1000H.: (6.00)

HIGHEST RATED SPEED

Setting point:

Speed 1/min : 600

Contr.-rod trav.mm: 16.0

Testing:

1st c-rod trav.mm : 10.30

Speed 1/min : 1145...1160

2nd c-rod trav.mm : 4.00

Speed 1/min : 1195...1225

4th speed 1/min : 1300

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 250

M20

Contr.-rod trav.mm: 6.5

Testing:

Speed 1/min : 100

C-rod trav.mm min : 8.00

Speed 1/min : 250

C-rod trav.mm : 6.40...6.60

C-rod trav.mm : 2.00

Speed 1/min : 370...410

TORQUE CONTROL

Dimension a mm : 0.40

Torque-control curve - 1st version

1st speed 1/min : 1100

C-rod trav.mm : 11.30...11.40

2nd speed 1/min : 600

C-rod trav.mm : 11.70...11.80

3rd speed 1/min : 940

C-rod trav.mm : 11.50...11.70

4th speed 1/min : 1015

C-rod trav.mm : 11.40...11.60

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 500

Del.quantity cm3/ : 113.0...116.0

1000H.: (110.5...118.5)

Speed 1/min : 800

Del.quantity cm3/ : 115.5...118.5

1000H.: (113.0...121.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 10.30

Speed 1/min : 1145...1160

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 147.0...157.0

1000H.: (144.0...160.0)

Contr.-rod trav.mm: 15.70...16.30

LOW IDLE

Speed 1/min : 250

Contr.-rod trav.mm: 6.40...6.60

Del.quantity cm3/ : 15.0...21.0

1000H.: (12.5...23.5)

Dispersion cm3/ : 3.00

1000H.: (5.00)

Remarks:

: MAN-NR. 2-7500

Set idle stop at 250 min. -1 to a
control-rod travel of 6.5 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MAN 11,1 K1
 Edition : 12.09.86
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 400 846 379
 Injection pump
 Pump designation : PES6A95D410LS2489
 EP type number : 0 410 896 949
 Governor
 Governor design. : RQ250/1050AB894DL
 Governor no. : 0 420 202 256

Customer-spec. information
 Customer : MAN

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 000
 Inlet press., bar : 1.00
 Calibrating nozzle-holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test inj. tubing : 1 680 750 003
 Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600
 (A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 1.50...1.60
 : (1.45...1.65)
 Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - ^o : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1050

Contr.-rod trav.mm: 10.00...10.10

Del.quantity cm3/ : 10.1...10.3

100H.: (9.9...10.5)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 5.9...6.1

Del.quantity cm3/ : 1.2...1.8

100H.: (0.9...2.0)

Dispersion cm3/ : 0.3

100H.: (0.5)

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 600

Contr.-rod travelmm: 15.40...16.40

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1050

Del.quantity cm3/ : 101.5...103.5

1000H.: (99.5...105.5)

Dispersion cm3/ : 3.50

1000H.: (6.00)

HIGHEST RATED SPEED

Setting point:

Speed 1/min : 600

Contr.-rod trav.mm: 15.9

Testing:

1st c-rod trav.mm : 9.00

Speed 1/min : 1095...1110

2nd c-rod trav.mm : 4.00

Speed 1/min : 1140...1170

LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 250

Contr.-rod trav.mm: 6.0

Testing:

Speed 1/min : 100

M22

C-rod trav.mm min : 7.50

Speed 1/min : 250

C-rod trav.mm : 5.90...6.10

C-rod trav.mm : 2.00

Speed 1/min : 360...400

TORQUE CONTROL

Dimension a mm : 0.35

Torque-control curve - 1st version

1st speed 1/min : 1050

C-rod trav.mm : 10.00...10.10

2nd speed 1/min : 500

C-rod trav.mm : 10.50...10.60

4th speed 1/min : 960

C-rod trav.mm : 10.10...10.30

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 500

Del.quantity cm3/ : 99.5...103.5

1000H.: (97.5...105.5)

Speed 1/min : 700

Del.quantity cm3/ : 99.5...103.5

1000H.: (97.5...105.5)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 9.00

Speed 1/min : 1095...1110

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 116.5...126.5

1000H.: (113.5...129.5)

Contr.-rod trav.mm: 12.50...14.50

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MAN 11,1P21
Edition : 22.05.87
Superceeded : 12.9.86
Calibrating oil : ISO-4113
Combination no. : 0 400 846 502
Injection pump
Pump designation : PES6A95D410LS2542
EP type number : 0 410 896 936
Governor
Governor design. : RQ250/1100AB1137-2L
Governor no. : 0 420 200 084

Customer-spec. information
Customer : MAN

Engine : D2566 M/MF

1st version kW : 177.0
Speed 1/min: 1500
2nd version kW : 168.0
Speed 1/min: 1500

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.50...1.60
: (1.45...1.65)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 6

BASIC SETTING

1st speed 1/mi: 1100

Contr.-rod trav.mm: 12.00...12.10

Del.quantity cm3/ : 12.4...12.6

100H.: (12.2...12.8)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 6.5...6.7

Del.quantity cm3/ : 0.8...1.4

100H.: (0.5...1.6)

Dispersion cm3/ : 0.3

100H.: (0.5)

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 600

Contr.-rod travelmm: 15.60...16.40

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1100

Del.quantity cm3/ : 124.5...126.5

1000H.: (122.5...128.5)

Dispersion cm3/ : 3.00

1000H.: (6.00)

2nd version

Speed 1/min: 1100

Del.quantity cm3/ : 118.0...120.0*

1000H.: (116.0...122.0)

HIGHEST RATED SPEED

Setting point:

Speed 1/min : 600

Contr.-rod trav.mm: 16.0

Testing:

1st c-rod trav.mm : 11.00

Speed 1/min : 1145...1160
2nd c-rod trav.mm : 4.00
Speed 1/min : 1195...1225

Setting point:

Speed 1/min : 600 *
Contr.-rod trav.mm: 16.0

Testing:

1st c-rod trav.mm : 11.0 *
Speed 1/min : 1145...1160
2nd c-rod trav.mm : 4.00
Speed 1/min : 1195...1225

LOWEST RATED SPEED I

Setting point w/out aux. spring
Speed 1/min : 250
Contr.-rod trav.mm: 6.0

Testing:

Speed 1/min : 100
C-rod trav.mm min : 7.50
Speed 1/min : 250
C-rod trav.mm : 5.90...6.10
C-rod trav.mm : 2.00
Speed 1/min : 360...400

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1100
C-rod trav.mm : 12.00...12.10
2nd speed 1/min : 500
C-rod trav.mm : 12.00...12.20

Torque-control curve - 2nd version

1st speed 1/min : - *
C-rod trav.mm : -
2nd speed 1/min : -
C-rod trav.mm : -

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 500
Del.quantity cm3/ : 107.5...113.5
1000H.: (105.5...115.5)
Speed 1/min : 750
Del.quantity cm3/ : 110.5...113.5
1000H.: (108.0...116.0)
Speed 1/min : 500
Del.quantity cm3/ : 102.0...108.0 *
1000H.: (100.0...110.0)
Speed 1/min : 750
Del.quantity cm3/ : 106.0...109.0 *
1000H.: (104.0...111.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 11.00

M25

Speed 1/min : 1145...1160

2nd version

1mm control-rod travel less than
full-load trav.mm: 11.00

Speed 1/min : 1145...1160 *

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 122.0...132.0
1000H.: (119.0...135.0)
Contr.-rod trav.mm: 15.50...15.90

Remarks:

: MAN-NR. 2-7409

* Version 2

*Tropics version

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MAN 11,4 B4
Edition : 12.09.86
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 400 846 532
Injection pump
Pump designation : PES6A95D410LS2639-1
EP type number : 0 410 896 920
Governor
Governor design. : RQ250/1100AB1137-9L
Governor no. : 0 420 200 091

Customer-spec. information
Customer : MAN

Engine : D2566MF/220

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.50...1.60
 : (1.45...1.55)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 6

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 14.30...14.40

Del.quantity cm3/ : 12.4...12.6

100H.: (12.2...12.8)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 7.4...7.6

Del.quantity cm3/ : 1.0...1.6

100H.: (0.7...1.8)

Dispersion cm3/ : 0.3

100H.: (0.5)

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 600

Contr.-rod travelmm: 15.60...16.40

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Del.quantity cm3/ : 124.0...126.0

1000H.: (122.0...128.0)

Dispersion cm3/ : 3.50

1000H.: (6.00)

HIGHEST RATED SPEED

Setting point:

Speed 1/min : 600

Contr.-rod trav.mm: 16.0

Testing:

1st c-rod trav.mm : 11.80

Speed 1/min : 1145...1160

2nd c-rod trav.mm : 4.00

Speed 1/min : 1240...1270

4th speed 1/min : 1350

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 250

Contr.-rod trav.mm: 7.5

Testing:

Speed 1/min : 100
C-rod trav.mm min : 8.90
Speed 1/min : 250
C-rod trav.mm : 7.40...7.60
C-rod trav.mm : 2.00
Speed 1/min : 390...430

TORQUE CONTROL

Dimension a mm : 0.65
Torque-control curve - 1st version
1st speed 1/min : 1100
C-rod trav.mm : 12.80...12.90
2nd speed 1/min : 600
C-rod trav.mm : 14.30...14.40
3rd speed 1/min : 865
C-rod trav.mm : 13.80...14.00
4th speed 1/min : 940
C-rod trav.mm : 13.10...13.30

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 1100
Del.quantity cm3/ : 119.0...123.0
1000H.: (116.5...125.5)
Speed 1/min : 500
Del.quantity cm3/ : 124.0...127.0
1000H.: (121.5...129.5)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 11.80
Speed 1/min : 1145...1160

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 105.0...115.0
1000H.: (102.0...118.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 4,0 E
Edition : 12.09.86
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 400 874 242
Injection pump
Pump designation : PES4A90D41ORS2728
EP type number : 0 410 894 030
Governor
Governor design. : RSV350...750AOC2006-4L
Governor no. : 0 420 232 465

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM364

1st version kW : 36.0
Speed 1/min: 1500

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 2.25...2.35
: (2.20...2.40)

Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 3- 4- 2

SD ang. spacing°CS: 0-90-180-270
Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 12.00...12.10

Del.quantity cm3/ : 5.7...5.9

100H.: (5.5...6.1)

Dispersion cm3/ : 0.3

100H.: (0.4)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 6.9...7.1

Del.quantity cm3/ : 1.0...1.4

100H.: (0.8...1.6)

Dispersion cm3/ : 0.2

100H.: (0.4)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Contr.-rod travelmm: 0.30...0.10

Governor-spring reload

Notch setting x : 2.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Del.quantity cm3/ : 57.0...59.0

1000H.: (55.0...61.0)

Dispersion cm3/ : 3.00

1000H.: (4.50)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 26...34

Testing:

1st c-rod trav.mm : 11.00

Speed 1/min : 750...755

2nd c-rod trav.mm : 4.00

Speed 1/min : 780...793

4th speed 1/min : 850.0

C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever

position degrees: 12...20

Setting point w/out aux. spring

Speed 1/min : 350

Contr.-rod trav.mm: 7.0

Testing:

Speed 1/min : 100

C-rod trav.mm min : 19.50

Speed 1/min : 350

C-rod trav.mm : 6.90...7.10

C-rod trav.mm : 2.00

Speed 1/min : 375...405

SET IDLE AUXILIARY SPRING

Speed 1/min : 2.00

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 11.00

Speed 1/min : 750...755

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 78.0...88.0

1000H.: (75.0...91.0)

Contr.-rod trav.mm: 16.50...16.90

Remarks:

Observe VDT-I-420/120

0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CAS 8,3 J
Edition : 7.86
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 400 876 172
Injection pump
Pump designation : PES6A80D420LS2054
Governor
Governor design. : RSV300...1000A2B461D
R

Customer-spec. information
Customer : CASE

Engine : A401D

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42
Inlet press., bar : 1.5
Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 9 681 230 706

Outside diameter
x Wall thickness
x Length mm : 6,00X2,00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar : 2,15...2,25

Prestroke mm : 9,0
1-5-3-6-2-4

SD ang. spacing°CS : 0-60-120-180-240-300
Tolerance + - ° : 0,5(0,75)

BASIC SETTING

NO2

1st speed 1/mi: 1000

Contr.-rod trav.mm: 9,0

Del.quantity cm3/ : 5,5...6,0

100H.: (-)

2nd speed 1/min: 200

Contr.-rod trav. m: 6,0

Del.quantity cm3/ : 1,3...2,2

100H.: (-)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Contr.-rod travelmm: 0,3...1,0

Governor-spring reload

Notch setting x : -

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 980

Del.quantity cm3/ : 64,0...65,0

1000H.: (62,5...66,5)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 42...50

Testing:

1st c-rod trav.mm : 4,6

Speed 1/min : 1070

2nd c-rod trav.mm : 2,0

Speed 1/min : 1120

3rd c-rod trav.mm : 0,7

Speed 1/min : 1180

LOWEST RATED SPEED I

Control-lever

position degrees: 19...27

Setting point w/out aux. spring

Speed 1/min : 300

Contr.-rod trav.mm: 5,5

Testing:

Speed 1/min : 150

C-rod trav.mm min : 19,0

Speed 1/min : 300

C-rod trav.mm : 5,2...5,8

C-rod trav.mm : 2,4

Speed 1/min : 400

Speed 1/min : 500

C-rod trav.mm max : 1,0

TORQUE CONTROL

Dimension a mm : 980 0
C-rod trav.mm : .0.01 700 0
2nd speed 1/min : .75..
C-rod trav.mm : .1,05 400 0
3rd speed 1/min : .75..
C-rod trav.mm : .1,05

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 700
Speed 1/min : 71,0.
Del.quantity cm3/ : ..72,0 (67,5
1000H.: ...73,5)
Charge press. hPa : 600
Speed 1/min : 70,0.
Del.quantity cm3/ : ..72,0 (67,0
1000H.: ...75,0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 76,0...84,0

HIGH IDLE

1st version

Charge press. hPa : 1090
Speed 1/min : 13,5.
Contr.-rod trav.mm: ..21,5

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 5,7 W 11
Edition : 27.03.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 400 876 309
Injection pump
Pump designation : PES6A90D410RS2569
EP type number : 0 410 896 071
Governor
Governor design. : RSV350...1400AOC1135
-1L
Governor no. : 0 420 232 425
Customer-spec. information
Customer : DB

Engine : OM 352

1st version kW : 88.0
Speed 1/min: 2400

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.25...2.35
: (2.20...2.40)

N04

Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1400
Contr.-rod trav.mm: 9.80...9.90
Del.quantity cm3/ : 5.4...5.5
100H.: (5.2...5.7)
Dispersion cm3/ : 0.3
100H.: (0.4)
2nd speed 1/min: 350.0
Contr.-rod trav. m: 7.9...8.1
Del.quantity cm3/ : 0.9...1.5
100H.: (0.7...1.7)
Dispersion cm3/ : 0.2
100H.: (0.4)

SLEEVE POSITION

Control-lever position
Degree: -3
Speed 1/min: 800
Contr.-rod travelmm: 0.30...1.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1400
Del.quantity cm3/ : 54.5...55.5
1000H.: (52.5...57.5)
Dispersion cm3/ : 3.00
1000H.: (4.50)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 65...73

Testing:

1st c-rod trav.mm : 8.80
Speed 1/min : 1440...1450
2nd c-rod trav.mm : 4.00
Speed 1/min : 1475...1505
3rd c-rod trav.mm : 4.00
Speed 1/min : 1505...1535
4th speed 1/min : 1600
C-rod trav.mm : 0.30...1.70

LOWEST RATED SPEED I

Control-lever
position degrees: 21...29
Setting point w/out aux. spring
Speed 1/min : 350
Contr.-rod trav.mm: 7.5

Testing:
Speed 1/min : 100
C-rod trav.mm min : 19.00
Speed 1/min : 350
C-rod trav.mm : 7.40...7.60
C-rod trav.mm : 2.00
Speed 1/min : 590...650

TORQUE CONTROL
Torque-control curve - 1st version
1st speed 1/min : 1400
C-rod trav.mm : 9.80...9.90
2nd speed 1/min : 500
C-rod trav.mm : 10.80...10.90
3rd speed 1/min : 950
C-rod trav.mm : 10.30...10.60

FUEL-DELIVERY CHARACTERISTICS
Speed 1/min : 500
Del.quantity cm3/ : 46.5...49.5
1000H.: (44.5...51.5)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 8.80
Speed 1/min : 1440...1450

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 78.0...88.0
1000H.: (75.0...91.0)
Contr.-rod trav.mm: 16.00...16.40

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DEE 6,6 B
Edition : 9.87
Superceeded : 7.86
Calibrating oil : ISO-4113
Combination no. : 0 401 276 017
Injection pump
Pump designation : PES6A100D41ORS3020
Governor
Governor design. : RSV400...1100A2B660
DL

Customer-spec. information
Customer : JOHN DEERE

Engine : 6404 A

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6,00x2,00x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Prestroke mm : 2.00...2.10
: (1.95...2.15)
Contr.-rod trav.mm: 10.00
Cam sequence : 1-5-3-6-2-4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - ° : 0.50(0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1100

Contr.-rod trav.mm: 10.00

Del.quantity cm3/ : 10.4...10.6

100H.: (10.2...10.8)

Dispersion cm3/ : 0.3

100H.: (-)

2nd speed 1/min: 400
Contr.-rod trav. m: 6.30
Del.quantity cm3/ : 1.2...1.6
100H.: (1.0...1.8)
Dispersion cm3/ : 0.3
100H.: (-)

SLEEVE POSITION

Control-lever position
Degree: -3
Speed 1/min: 800
Contr.-rod travelmm: 0.30...1.40

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1100
Charge press. hPa : 500
Del.quantity cm3/ : 104.0...106.0
1000H.: (102.0...108.0)
Dispersion cm3/ : 3.0
1000H.: (-)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 40...48

Testing:
1st c-rod trav.mm : 9.00
Speed 1/min : 1145...1155
2nd c-rod trav.mm : 4.80
Speed 1/min : 1200
4th speed 1/min : 1350
C-rod trav.mm : 0.30...1.70

LOWEST RATED SPEED I

Control-lever
position degrees: 17...25
Setting point w/out aux. spring
Speed 1/min : 400

Contr.-rod trav.mm: 5.80
Speed 1/min : 400
C-rod trav.mm : 6.20...6.40
C-rod trav.mm : 3.0
Speed 1/min : 480
Speed 1/min : 600
C-rod trav.mm max : 1.00

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1100
C-rod trav.mm : 10.00
2nd speed 1/min : 750
C-rod trav.mm : 10.50

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 550
Pressure hPa : 70
Contr.-rod trav.mm: ?

Measurement

Speed 1/min : 550

1st pressure hPa : 500
C-rod trav.mm : 10.00

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 500
Speed 1/min : 750
Del.quantity cm3/ : 113.0...116.0
1000H.: (110.0...119.0)

Charge press. hPa : -
Speed 1/min : 550
Del.quantity cm3/ : 62.0...68.0
1000H.: (60.0...70.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 9.00
Speed 1/min : 1145...1155

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 155.0...175.0
1000H.: (-)

HIGH IDLE

Speed 1/min : 1200

N07

Del.quantity cm3/ : 26.5...36.5
1000H.: (-)

LOW IDLE

Speed 1/min : 400
Del.quantity cm3/ : 12.0...16.0
1000H.: (-)

Remarks:

Start-of-delivery mark at 14° angular displacement of the cam after start of delivery of cylinder 1 with control-rod travel = 10.50 mm.

APPLICATION

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SSC 14,0 A1
Edition : 22.05.87
Superceeded : 10.85
Calibrating oil : ISO-4113

Combination no. : 0 401 830 711

Injection pump
Pump designation : PE12P100A520/6RS3103
-1

EP type number : 0 411 800 703

Governor
Governor design. : RQV375...1000PA639-2
Governor no. : 0 421 813 514

Customer-spec. information
Customer : SSCM

Engine : V 12.520 AN

1st version kW : 220.0
Speed 1/min: 2000

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
: (2.75...2.95)

Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 8- 5- 10- 3- 7-
6- 11- 2- 9- 4- 12

SD ang. spacing°CS: 0-15-60-75-120-135-
180-195-240-255-300-
315

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1000

Contr.-rod trav.mm: 11.60...11.70

Del.quantity cm3/ : 9.3...9.5

100H.: (9.1...9.7)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 375.0

Contr.-rod trav. m: 7.6...7.8

Del.quantity cm3/ : 1.0...1.4

100H.: (0.7...1.6)

Dispersion cm3/ : 0.3

100H.: (0.5)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 350

Sleeve travel mm: 1.10...1.60

2nd speed 1/min: 450

Sleeve travel mm: 3.30...3.70

3rd speed 1/min: 700

Sleeve travel mm: 5.20...5.60

4th speed 1/min: 1000

Sleeve travel mm: 7.60...7.80

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1075

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1000

Del.quantity cm3/ : 93.5...95.5

1000H.: (91.5...97.5)

Dispersion cm3/ : 3.50

1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 116...124

Testing:

1st c-rod trav.mm : 10.60

Speed 1/min : 1040...1050

2nd c-rod trav.mm : 4.00

Speed 1/min : 1125...1155

4th speed 1/min : 1250

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 71...79

Testing:

Speed 1/min : 100

C-rod trav.mm min : 9.20

Speed 1/min : 375

C-rod trav.mm : 7.60...7.80

CONSTANT REGULATION

Speed 1/min : 375...475

SWITCH-OVER POINT

Speed 1/min : 320 (340)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 10.60

Speed 1/min : 1040...1050

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 230.0...250.0

1000H.: (226.0...254.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 11,8 E 1
Edition : 21.05.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 401 846 329
Injection pump
Pump designation : PE6P100A72ORS15
EP type number : 0 411 806 106
Governor
Governor design. : RQ250/1100PA269R
Governor no. : 0 421 801 050

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM 355

TEST BENCH REQUIREMENTS

Calibrating-pil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
: (2.75...2.95)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1100

Contr.-rod trav.mm: 13.00...13.10

Del.quantity cm3/ : 11.8...12.0

100H.: (11.6...12.2)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 7.4...7.6

Del.quantity cm3/ : 1.7...2.3

100H.: (1.4...2.5)

Dispersion cm3/ : 0.3

100H.: (0.5)

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 600

Contr.-rod travelmm: 15.60...16.40

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1100

Del.quantity cm3/ : 118.5...120.5

1000H.: (116.5...122.5)

Dispersion cm3/ : 3.00

1000H.: (6.00)

HIGHEST RATED SPEED

Setting point:

Speed 1/min : 600

Contr.-rod trav.mm: 16.0

Testing:

1st c-rod trav.mm : 12.00

Speed 1/min : 1125...1145

2nd c-rod trav.mm : 4.00

Speed 1/min : 1195...1230

4th speed 1/min : 1300

C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 250

Contr.-rod trav.mm: 6.0

Testing:

Speed 1/min : 100
C-rod trav.mm min : 7.00
Speed 1/min : 250
C-rod trav.mm : 5.90...6.10
C-rod trav.mm : 2.00
Speed 1/min : 385...425

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 450
Del.quantity cm3/ : 101.0...105.0
1000H.: (99.0...107.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 12.00
Speed 1/min : 1125...1145

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 140.0...160.0
1000H.: (136.0...164.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : ENA 11,9 A
 Edition : 28.08.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 401 846 550
 Injection pump
 Pump designation : PE6P120A32ORS257
 EP type number : 0 411 826 075
 Governor
 Governor design. : RQV250...1050PA808-2
 Governor no. : 0 421 813 666

Customer-spec. information
 Customer : ENASA

Engine : 96 T1 CX

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Contr.-rod trav.mm: 9.00...12.00

N12

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing⁰CS: 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1030

 Contr.-rod trav.mm: 12.30...12.40

 Del.quantity cm3/ : ?

 100H.: (?)

 2nd speed 1/min: 250.0
 Contr.-rod trav. m: ?
 Del.quantity cm3/ : 1.7...2.3
 100H.: (1.4...2.6)
 Dispersion cm3/ : 0.8
 100H.: (1.2)

(B) Setting of injection pump with
 externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 250
 Sleeve travel mm: 1.00...1.40
 2nd speed 1/min: 350
 Sleeve travel mm: 1.70...2.30
 3rd speed 1/min: 700
 Sleeve travel mm: 4.50...5.10
 4th speed 1/min: 1095
 Sleeve travel mm: 8.20...8.40
 5th speed 1/min: 1185
 Sleeve travel mm: 9.20...9.60

SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed 1/min: 1115
 Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 1030
 Charge press. hPa : 900
 Del.quantity cm3/ : ?
 1000H.: (?)

HIGHEST RATED SPEED

1st version
 Control-lever
 position degrees: 43...51

Testing:

1st c-rod trav.mm : 11.30
Speed 1/min : 1090...1100
2nd c-rod trav.mm : 4.00
Speed 1/min : 1170...1200
4th speed 1/min : 1300
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: ?

Testing:

Speed 1/min : 100
C-rod trav.mm min : 1.50
Speed 1/min : 250
C-rod trav.mm : ?

CONSTANT REGULATION

Speed 1/min : 250...370

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500
Pressure hPa : 900
Contr.-rod trav.mm: 12.30...12.40

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 8.20...9.60
2nd pressure hPa : 570
C-rod trav.mm : 11.60...11.70
3rd pressure hPa : 280
C-rod trav.mm : 9.90...10.10

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 900
Speed 1/min : 650
Del.quantity cm3/ : ?
1000H.: (?)
Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : ?
1000H.: (?)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 11.30
Speed 1/min : 1090...1100

N13

STARTING FUEL DELIVERY

Speed 1/min : 100

LOW IDLE

Speed 1/min : 250
Del.quantity cm3/ : 17.0...23.0
1000H.: (14.0...26.0)
Dispersion cm3/ : 8.00
1000H.: (12.00)

Remarks:

Test specifications upon request.

APPLICATION

Special-purpose vehicle

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VOL 10,0 Q8
 Edition : 18.09.87
 Superceeded : 23.9.86
 Calibrating oil : ISO-4113
 Combination no. : 0 401 846 757
 Injection pump
 Pump designation : PE6P110A32ORS3108
 EP type number : 0 411 816 727
 Governor
 Governor design. : RQV250...1100PA649
 Governor no. : 0 421 813 346

Customer-spec. information
 Customer : VOLVO

Engine : THD100EA

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.00...3.10
 : (2.95...3.15)
 Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
 Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

 Contr.-rod trav.mm: 9.00...9.10

 Del.quantity cm3/ : 9.2...9.4

 100H.: (8.9...9.7)

 Dispersion cm3/ : 0.4

 100H.: (0.7)

 2nd speed 1/min: 250
 Contr.-rod trav. m: 5.3...5.5
 Del.quantity cm3/ : 2.9...3.3
 100H.: (2.6...3.5)
 Dispersion cm3/ : 0.3
 100H.: (0.6)

(B) Setting of injection pump with
 externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 250
 Sleeve travel mm: 1.10...1.30
 2nd speed 1/min: 500
 Sleeve travel mm: 4.10...4.90
 3rd speed 1/min: 700
 Sleeve travel mm: 6.30...6.70
 4th speed 1/min: 950
 Sleeve travel mm: 6.30...6.70
 5th speed 1/min: 1100
 Sleeve travel mm: 7.00...7.50

SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed 1/min: 1175
 Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 700
 Del.quantity cm3/ : 92.0...94.0
 1000H.: (89.0...97.0)
 Dispersion cm3/ : 4.00
 1000H.: (7.50)

HIGHEST RATED SPEED

1st version

Control-lever
position degrees: 61...69

Testing:
1st c-rod trav.mm : 8.00
Speed 1/min : 1160...1170
2nd c-rod trav.mm : 4.00
Speed 1/min : 1220...1250
4th speed 1/min : 1350
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I
Control-lever
position degrees: 7...15

Testing:
Speed 1/min : 100
C-rod trav.mm : 6.80
Speed 1/min : 250
C-rod trav.mm : 5.30...5.50
C-rod trav.mm : 2.00
Speed 1/min : 350...410

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 8.00
Speed 1/min : 1160...1170

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 160.0...190.0
1000H.: (-)
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 5.30...5.50
Del.quantity cm3/ : 29.0...33.0
1000H.: (26.5...35.5)
Dispersion cm3/ : 3.00
1000H.: (6.00)

Remarks:
On activation of the starting solenoid,
the start position must be reached.

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 11,0 R
 Edition : 31.07.87
 Superseded : 3.85
 Calibrating oil : ISO-4113
 Combination no. : 0 401 846 805
 Injection pump
 Pump designation : PE6P110A32OLS3814-10
 EP type number : 0 411 816 741
 Governor
 Governor design. : RQ300/1150PA187-6
 Governor no. : 0 421 801 155

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM421

1st version kW : 159.0
 Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 6- 3- 5- 2- 4- 1

SD ang. spacing°CS: 0-45-120-165-240-285
 Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 6

BASIC SETTING

1st speed 1/mi: 1150

Contr.-rod trav.mm: 12.40...12.50

Del. quantity cm3/ : 13.2...13.4

100H.: (12.9...13.6)

Dispersion cm3/ : 0.4

100H.: (0.8)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 8.3...8.5

Del. quantity cm3/ : 1.2...1.8

100H.: (0.9...2.0)

Dispersion cm3/ : 0.4

100H.: (0.7)

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 650

Contr.-rod travelmm: 13.20...14.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1150

Del. quantity cm3/ : 132.0...134.0

1000H.: (129.5...136.5)

Dispersion cm3/ : 4.00

1000H.: (8.00)

HIGHEST RATED SPEED

Setting point:

Speed 1/min : 650

Contr.-rod trav.mm: 13.6

Testing:

1st c-rod trav.mm : 11.50

Speed 1/min : 1195...1210

2nd c-rod trav.mm : 4.00

Speed 1/min : 1240...1270

4th speed 1/min : 1350

C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 300

Contr.-rod trav.mm: 8.4

Testing:

Speed 1/min : 100

C-rod trav.mm min : 10.00

Speed 1/min : 300

C-rod trav.mm : 8.30...8.50

C-rod trav.mm : 2.00

Speed 1/min : 430...470

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600

Del.quantity cm3/ : 110.0...114.0

1000H.: (107.0...117.0)

Dispersion cm3/ : 6.00

1000H.: (9.00)

SETTING CONTROL-ROD STOP

Speed 1/min : 600

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 11.50

Speed 1/min : 1195...1210

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 130.0...150.0

1000H.: (126.0...154.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 11,0 S
 Edition : 12.09.86
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 401 846 823
 Injection pump
 Pump designation : PE6P110A32OLS3835
 EP type number : 0 411 816 749
 Governor
 Governor design. : RQ300/900PA187-14
 Governor no. : 0 421 801 357

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM441

1st version kW : 150.0
 Speed 1/min: 1800

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 6- 3- 5- 2- 4- 1

SD ang. spacing⁰CS: 0-45-120-165-240-285
 Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 6

BASIC SETTING

1st speed 1/mi: 900

Contr.-rod trav.mm: 12.50...12.60

Del.quantity cm3/ : 12.6...12.8

100H.: (12.3...13.0)

Dispersion cm3/ : 0.4

100H.: (0.8)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 8.0...8.2

Del.quantity cm3/ : 1.6...2.2

100H.: (1.3...2.4)

Dispersion cm3/ : 0.4

100H.: (0.7)

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 650

Contr.-rod travelmm: 13.20...14.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 900

Del.quantity cm3/ : 126.0...128.0

1000H.: (123.5...130.5)

Dispersion cm3/ : 4.00

1000H.: (8.00)

HIGHEST RATED SPEED

Setting point:

Speed 1/min : 650

Contr.-rod trav.mm: 13.6

Testing:

1st c-rod trav.mm : 11.50

Speed 1/min : 940...955

2nd c-rod trav.mm : 4.00

Speed 1/min : 985...1015

4th speed 1/min : 1100

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 300

Contr.-rod trav.mm: 8.1

Testing:

Speed 1/min : 100

C-rod trav.mm min : 9.30

Speed 1/min : 300

C-rod trav.mm : 8.00

C-rod trav.mm : 2.00

Speed 1/min : 430...470

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600

Del.quantity cm3/ : 124.0...128.0

1000H.: (121.0...131.0)

Dispersion cm3/ : 6.00

1000H.: (9.00)

SETTING CONTROL-ROD STOP

Speed 1/min : 600

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 11.50

Speed 1/min : 940...955

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 130.0...150.0

1000H.: (126.0...154.0)

Remarks:

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 50...58

Testing:

1st c-rod trav.mm : 11.90

Speed 1/min : 955...965

2nd c-rod trav.mm : 4.00

Speed 1/min : 1010...1040

4th speed 1/min : 1100

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 16...24

Testing:

Speed 1/min : 100

C-rod trav.mm min : 9.50

Speed 1/min : 300

C-rod trav.mm : 8.00...8.20

CONSTANT REGULATION

Speed 1/min : 300...500

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600

Del.quantity cm3/ : 124.0...128.0

1000H.: (121.0...131.0)

Dispersion cm3/ : 6.00

1000H.: (8.00)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 11.90

Speed 1/min : 955...965

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 130.0...150.0

1000H.: (126.0...154.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 11,0 S 4
Edition : 18.09.87
Superceeded : 12.9.86
Calibrating oil : ISO-4113
Combination no. : 0 401 846 830
Injection pump
Pump designation : PE6P110A320LS3835
EP type number : 0 411 816 749
Governor
Governor design. : RQV300...950PA829K
Governor no. : 0 421 815 166

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM441

1st version kW : 150.0
Speed 1/min: 1900

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 6- 3- 5- 2- 4- 1

SD ang. spacing°CS: 0-45-120-165-240-285
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 6

BASIC SETTING

1st speed 1/mi: 950

Contr.-rod trav.mm: 13.10...13.20

Del.quantity cm3/ : 12.6...12.8

100H.: (12.3...13.0)

Dispersion cm3/ : 0.4

100H.: (0.8)

2nd speed 1/min: 300

Contr.-rod trav. m: 8.8...8.9

Del.quantity cm3/ : 1.5...2.1

100H.: (1.2...2.3)

Dispersion cm3/ : 0.4

100H.: (0.7)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 1.10...1.30

2nd speed 1/min: 500

Sleeve travel mm: 3.20...3.40

3rd speed 1/min: 800

Sleeve travel mm: 5.90...6.10

4th speed 1/min: 1000

Sleeve travel mm: 8.00...8.40

5th speed 1/min: 1050

Sleeve travel mm: 9.50...10.00

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 975

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 950

Del.quantity cm3/ : 126.0...128.0

1000H.: (123.5...130.5)

Dispersion cm3/ : 4.00
1000H.: (8.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 57...65

Setting point:

Speed 1/min : 975
Contr.-rod trav.mm: 16.5

Testing:

1st c-rod trav.mm : 12.10
Speed 1/min : 990...1000
2nd c-rod trav.mm : 4.00
Speed 1/min : 1045...1075
4th speed 1/min : 1300
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 8.9

Testing:

Speed 1/min : 100
C-rod trav.mm min : 10.60
Speed 1/min : 300
C-rod trav.mm : 8.80...9.00

CONSTANT REGULATION

Speed 1/min : 300...450

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 975
C-rod trav.mm : 13.10...13.20
2nd speed 1/min : 600
C-rod trav.mm : 12.90...13.10
3rd speed 1/min : 750
C-rod trav.mm : 13.10...13.30

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600
Del.quantity cm3/ : 117.0...120.0
1000H.: (114.0...123.0)
Dispersion cm3/ : 6.00
1000H.: (9.00)
Speed 1/min : 750
Del.quantity cm3/ : 120.0...124.0
1000H.: (117.0...127.0)
Dispersion cm3/ : 6.00
1000H.: (9.00)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 12.10
Speed 1/min : 990...1000

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 130.0...150.0
1000H.: (126.0...154.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 11,7 D1
Edition : 18.09.87
Superceeded : 15.5.87
Calibrating oil : ISO-4113

Combination no. : 0 401 846 831

Injection pump
Pump designation : PE6P120A32ORS3183-1Y
EP type number : 0 411 826 765
Governor
Governor design. : RQ250/1000PA832
Governor no. : 0 421 801 368

Customer-spec. information
Customer : DAF

Engine : WS 282

1st version kW : 282.0
Speed 1/min: 2000

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
 : (3.65...3.85)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 850

Contr.-rod trav.mm: 13.10...13.20

Del.quantity cm3/ : 21.9...22.1

100H.: (21.6...22.4)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 6.9...7.1

Del.quantity cm3/ : 1.4...2.0

100H.: (1.1...2.3)

Dispersion cm3/ : 0.8

100H.: (1.2)

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 550

Contr.-rod travelmm: 15.60...16.40

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 850

Charge press. hPa : 1000

Del.quantity cm3/ : 219.0...221.0

1000H.: (216.0...224.0)

Dispersion cm3/ : 5.00

1000H.: (9.00)

HIGHEST RATED SPEED

Setting point:

Speed 1/min : 550

Contr.-rod trav.mm: 16.0

Testing:

1st c-rod trav.mm : 12.10

Speed 1/min : 1035...1050

2nd c-rod trav.mm : 4.00

Speed 1/min : 1120...1150

4th speed 1/min : 1250

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 250

Contr.-rod trav.mm: 7.0

Testing:

Speed 1/min : 100

C-rod trav.mm min : 8.50

Speed 1/min : 250

C-rod trav.mm : 6.90...7.10

C-rod trav.mm : 2.00

Speed 1/min : 350...390

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 850

C-rod trav.mm : 13.30...13.40

2nd speed 1/min : 1000

C-rod trav.mm : 13.20...13.40

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 600

Pressure hPa : 1000

Contr.-rod trav.mm: 13.10...13.20

Measurement

Speed 1/min : 600

1st pressure hPa : -

C-rod trav.mm : 10.10...10.30

2nd pressure hPa : 570

C-rod trav.mm : 12.40...12.50

3rd pressure hPa : 310

C-rod trav.mm : 10.70...11.00

FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -

Speed 1/min : 600

Del.quantity cm3/ : 144.0...146.0

1000H.: (141.0...149.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 12.10

Speed 1/min : 1035...1050

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 260.0...300.0

1000H.: (256.0...304.0)

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 6.90...7.10
Del.quantity cm3/ : 14.0...20.0
1000H.: (11.0...23.0)
Dispersion cm3/ : 8.00
1000H.: (12.00)

Remarks: